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ABSTRACT

The texts of six papers presented at the Canadian Symposium on Special Education Issues are included in these proceedings. The papers' titles and authors are: "How Are We Doing? Issues and Research Related to the Integration of Students with Special Needs" (Janet Quintal); "Post-Secondary Programmes and Services for Exceptional Persons: North American Trends" (Marc Wilchesky); "The Education of Severely and Profoundly Handicapped Children and Youth: Some Issues That Currently Need To Be Resolved" (Harry Dahl); "The Future is Now: Implications for the Development of (Special) Education Leaders" (Ron Posno); "The Charter of Rights and Special Education: Blessing or Curse?" (A. Wayne MacKay); and "Computers in Special Education: Using Technology to Make Up the Difference" (Peter Lindsay). (JDD)

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THE ONTARIO COUNCIL OF ADMINISTRATORS OF SPECIAL EDUCATION

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- The Canadian Council for Exceptional Children

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HOW ARE WE DOING?
ISSUES AND RESEARCH RELATED TO THE INTEGRATION OF STUDENTS WITH SPECIAL NEEDS

Janet M. Quintal

Paper presented at
The Canadian Symposium on
Special Education Issues
Toronto, Canada
March 1986

HOW ARE WE DOING?

ISSUES AND RESEARCH RELATED TO THE INTEGRATION OF STUDENTS WITH SPECIAL NEEDS

Janet M. Quintal

During the past two decades there has been an ever growing movement in North American and Western European society toward the desegregation of minority groups. Historically the most obvious example of this process occurred with attempts to desegregate racial or cultural minorities and create equal opportunities for all individuals. As the wider social trend continued into the late sixties and early seventies the rights of the mentally handicapped and physically disabled gained public focus. Over the years there has been a de-emphasis of institutions and other facilities that restricted, or often effectively eliminated, the opportunity for individuals with special needs to participate to the maximum of their potential in society.

In keeping with widespread social changes educational systems began to focus on the types of services being provided for special education students and to challenge previously routine decisions to educate students with special needs in settings that were either partially or totally segregated from the mainstream. The changing values and focus of the seventies finally culminated in the passing of the Education of All Handicapped Children Act by the United States Senate in 1975. During the subsequent decade the practice of integrating children with various disabilities into the educational mainstream has become policy in most Canadian provinces.

It is important to understand the changes in educational policy within the wider historical context not only for sociological reasons, but also because it is important to appreciate that the trend away from segregated education resulted from social forces based on a growing respect and concern for civil rights. It was not a result of educational decision making supported by a solid research base favoring more regular placements. In fact the conclusions of research that predated legislation mandating mainstreaming or the provision of an appropriate program were ambiguous at best (Polloway, 1984). Describing the history of education for educably retarded students Meyers, MacMillan and Yoshida (1980) noted that:

> "The Zeitgeist for the education of the mildly retarded, which first supported the establishment of (special) classes, switched to mainstreaming without adequate empirical information on comparative goodness of programs. Empirical ambiguity permitted other forces, both political and philosophical, to push the change..." (p. 179)

Despite the lack of conclusive initial empirical support for integrating children with special needs, we've made significant legal, administrative and procedural strides in implementing policies and in placing and maintaining students in these settings. But it shouldn't be adequate to be philosophically committed to integration without also attempting to empirically evaluate the relative ability of different types of placements to meet the educational, social and vocational needs of individual students who require some type of special educational programming. For example, once placed in a setting deemed to be the most appropriate, are children receiving appropriate programs designed to meet their learning needs? How aware are teachers of the specific disabilities and needs of individual children integrated into their classrooms? Do they have the knowledge and resources to create and implement appropriate programs? Are the students being accepted by their peers and included as participating members of the mainstream? These are all important questions and it's exciting to know that one of the objectives of this symposium is to generate interest in research in special education, particularly in relation to Canadian educational programs.

The literature in the area of mainstreaming and integration has become extensive during the past twenty years. Though most of the reported research is based on American samples, much of it is likely relevant to the Canadian population, and certainly deserves replication within our educational systems. Due to the fact that integration represents a large, multifaceted domain, research has had to focus on more specific variables such as teacher knowledge, attitudes, the social skills of special needs students, social acceptance and academic achievement within different settings. However, independent of the variable selected for investigation, the results have inevitably tended to be the same--ambiguous. Within most disability groups (though mentally handicapped and learning disabled students are represented most frequently in the literature) some studies have indicated positive findings in favour of the regular classroom, others have found self contained classrooms to be more advantageous and still others have reported mixed findings or no significant differences. Some examples of more commonly researched issues will be presented shortly.

The problem of ambiguity or mixed results has plagued most avenues of integration research. It also makes global interpretations and generalizations of results difficult. The reasons for variation in research results are fairly easy to appreciate, for they represent basic inherent ethical and methodological problems in both conducting and replicating studies in a field as complex and multi-dimensional as integration. These problems include issues such as lack of random selection and assignment of students to different classrooms, and inability to match subjects on all relevant variables including the prevailing attitudes of school staff, lack of adequate or consistent evaluative measures, absence of control over teacher abilities and knowledge, and lack of control over variations in curriculum. In addition, as Polloway (1984) points out, rarely, if ever, have the best of special education programs including well qualified teachers, effective curriculum and early placement been compared with the best of regular class situations that include an effective resource program, teacher consultation and early intervention.

Ethical and methodological concerns will always make it difficult if not impossible to approach global questions such as the efficacy of self contained versus regular classrooms on a purely empirical basis. It is also impossible to confidently generalize findings from other school systems to our own, or among different disability groups. However, results from other systems can raise important questions and provide guidance in developing research protocols. In the end the most effective research we can carry out might be in evaluating our own programs both within school boards and between neighbouring boards who rely on varying methods of program implementation. Results could then be used to describe students and their progress within our classrooms, and to guide continuing program development within our own boards, rather than to make widespread generalizations about different types of special educational and regular class placements.

The remainder of this paper will focus on a number of specific variables or dependent measures that are relevant when considering integration for students with special needs. These include: academic achievement, social acceptance and interaction, self concept, and teacher attitudes and knowledge.

ACADEMIC ACHIEVEMENT

Relative to studies of social acceptance or adjustment of students in segregated versus regular classrooms, differences in academic achievement have received little attention (e.g.,Polloway & Snell, 1975; Polloway, 1984). This is primarily because academic achievement research is subject to significant methodological problems (Sabornie, 1985) such as an inability to randomly place students into different classrooms or to control for differences in curriculum or instructional techniques. In addition, merely placing a student into a self contained classroom with reduced numbers does not guarantee that the program will meet his/her learning needs.

Though data prior to and during the 1970's with mentally handicapped students revealed either no significant difference (Budoff & Gottlieb, 1976) or support for the regular classroom (Walken 1974; see Cegelka & Tyler, 1970 for a review of earlier studies), the findings cannot be generalized to the present when students attending programs in regular schools represent a wider range of functional abilities. Advances have also been made in instructional methods, curriculum and in identifying learning needs. Today research in this area would also be confounded by the use of resource room support.

Given that questions about academic achievement relative to self contained versus regular classrooms cannot be answered in a controlled empirical manner, efforts should focus on early identification of the learning needs of individual children, and identifying the type of classroom environment in which these needs can be most consistently met with appropriate instruction and curriculum. We also need to monitor the progress of students in different settings in relation to their individual programs. Perhaps cooperative research efforts between school boards who approach the needs of similar students through different learning situations can begin to provide needed information in this area.

An issue related to achievement that also requires investigation concerns the preparation of special needs students for the transition from school to work and adult life. In the past a primary focus of segregated programs at the secondary level, especially those for mildly or moderately retarded students, was instruction and practice in job related skills. The goal was to provide students with marketable skills necessary for employment or participation in some productive activity,whether competitive or not, and with at least some degree of personal independence. Feelings of independence and productivity are important to developing a sense of personal worth.

With more special needs students attending programs in regular schools, it is important to look at how well or to what extent they are mastering skills necessary for adult life. In a recent conversation with a Vocational Rehabilitation Counsellor concern was expressed about the relative lack of marketable skills, experience and self esteem that she has observed in mentally handicapped students leaving programs whose primary focus has been integration. We must be concerned about subjective observations such as these and carefully assess whether there are differences in the opportunities available to these students at the end of their school years.

SOCIAL ACCEPTANCE AND INTERACTION

This is an area that has commanded significantly more research attention than academic achievement. One reason is that research concerned with social acceptance or social interaction has been somewhat more methodologically sound. Peer nomination and rating scale procedures, both with their relative advantages and disadvantages, have been developed to assess social acceptance (Gresham, 1983; Sabornie, 1985). Other researchers have used behavioural observation techniques in association with sociometric measures (Ladd, Munson & Miller, 1984; Levy & Gottlieb, 1984) because expressed liking or acceptance does not necessarily mean that children are included in positive social interaction.

From the viewpoint of the exceptional student, there are many factors that have propelled the movement toward integration. Among the most significant are the rights of the child or adolescent to be educated in the least restrictive environment (which for many is the regular classroom), and a concern about the social and emotional development of children with disabilities. During the past decade there has been an increasing awareness of the importance of peer relationships in stimulating cognitive and social development, as well as a more widespread feeling that segregating special education students stigmatizes them and contributes to problems of acceptance and consequently feelings of inferiority and poor self-esteem.

In response to these issues supporters of integration have assumed that it would naturally result in increased acceptance by peers and increased social interaction between disabled students and their non disabled peers. It was also assumed that disabled children would model or imitate the behaviour of their peers through greater exposure or proximity to them.

Unfortunately experience and the literature continue to show that these expectations are not being met as naturally or as frequently as we might hope. In my own experience tolerance and maintenance in the mainstream is all too often confused with successful integration. Two extensive reviews of the literature (Meyers et al, 1980; Gresham, 1982) have pulled together a large number of investigations which offer no support for the expected benefits of integration. It's been shown that disabled students interact less frequently and more negatively with their peers than do non-disabled children, that they are often more poorly accepted by peers in regular settings, and that they do not model the behaviour of peers unless specific programming strategies are implemented.

It should be noted that though the overall literature on social acceptance is somewhat discouraging, the population of subjects in these studies is overwhelmingly represented by learning disabled, behaviourally disordered,emotionally disturbed and mentally handicapped children. As a group these children are known to experience higher incidences of adjustment and social competence problems (Cullinan & Epstein, 1985; McConaughy & Ritter, 1986). So it should come as no surprise that they are often not included, ignored or more actively rejected by their non-disabled peers.

Sabornie (1985) has also suggested that regular educators may not be truly aware of the social acceptance problems facing many handicapped populations. This question should be investigated. But rather than being discouraged by these findings, we should use the information constructively to create programs which assess social abilities, acceptance and behaviour in individual disabled students more systematically, and actively teach and reinforce social competencies. Empirical evidence does suggest that social skills training can assist children to interact more positively and to become better accepted by their peers (Gresham, 1982). Without appropriate assistance from educators children will continue to be negatively biased toward their disabled peers.

There is not a large body of research concerned with social acceptance or interaction involving disabled students who are not learning disabled, mentally handicapped or otherwise neurologically impaired. What little there is appears to be somewhat encouraging. Apodaca and his colleagues looked at the sociometric status of a small group of orthopedically disabled high school students who were integrated into at least one regular class (Apodaca, Mueller, Watson & Isaacson-Kailes, 1985). They found that other students generally liked these students, but no observations were made to assess the extent to which they interacted with their disabled peers. This study is difficult to interpret because of the amount of time the disabled students spent in regular classrooms is unknown, and there was no distinction made between neurologically versus orthopedically based physical disabilities.

In another study Hoben (1980) reported results including poor self concepts, limited social interaction and social immaturity in a group of visually impaired and hearing impaired students. Ladd and his research team (Ladd et al, 1984) found acceptance and positive social interaction between deaf and hearing high school students during school hours, but even students who participated in integrated friendships at school had little or no contact out of school. This may call into question the strength or quality of these friendships.

A number of researchers have stated that the most important measures in determining the success of integration programs should be social competence or social integration (Zigler & Seitz, 1980; Pearl, Bryan & Donahue, 1983). I support these proposals whole-heartedly and would also like to propose that an operational definition of successful "integration" for research purposes in our schools include regular spontaneous contact with peers, as well as spontaneous inclusion in activities. It is also important to look at contact between special needs students and their non-disabled peers outside of the classroom or school environment. If spontaneous self-initiated contact is not generalizing to their day-to-day lives, especially by adolescence, then the validity of our assumptions or true success of our programs must be questioned.

SELF CONCEPT

Self concept is a factor that has not received as much research attention in special education as one might expect. The importance of developing a positive concept cannot be underestimated. Without some degree of positive self esteem and confidence none of us could make important decisions, take risks or succeed in social situations. One of the most significant developmental tasks of childhood is creating a self concept and building positive self esteem. Together these reflect a person's judgement of his/her own capabilities, talents and power, as well as the extent to which an individual sees him/herself as being capable, successful and worthy. They influence behaviour, the kinds of tasks a child is willing to try, how he/she impresses other people and the kinds of social relationships that the child will develop.

As might be expected a child's growing and changing self concept will be influenced by the successes and failures he/she experiences in school. This raises questions about the possible effects of self contained versus integrated programs on the self concepts of disabled children. Inherent in the philosophy of integration is the conception that identifying children as in need of special education and segregating them would result in a lowered self concept (e.g., Guskin, Bartel & MacMillan, 1975). Research, albeit limited, has not supported this prediction (e.g., Smith, Dokecki, & Davis, 1977; Coleman, 1983; Dodd, 1984).

To summarize one study, Coleman (1983) looked at the self concepts of three groups of 9 to 12 year olds. These groups included regular students, mildly handicapped students in special education settings varying from partial integration to self contained, and children with academic difficulties who remained in the regular class. His results strongly suggest that lowered self concept cannot automatically be associated with special class placements. He found no significant overall group differences between the self concepts of regular and mildly disabled students, and no differences between disabled students in partially integrated versus self contained classes. Low self concepts were most evident in children who remained solely in regular classes while experiencing substantial academic difficulties.

These results are well explained by social comparison theory which in simplest terms states that in the absence of objective standards of comparison, we base our own feelings of self worth on the comparisons we make between ourselves and others. Children, who are unable to use objective indices or reasoning, will therefore compare their abilities to those of their immediate peer group. Thus, rather than lower self concept, a special class or resource room placement may actually enhance a child's sense of self worth.

TEACHER ATTITUDES AND KNOWLEDGE

The significant role that teacher attitudes play in the process of integration is well described in the literature (e.g., Hannah & Pilner, 1983). While regular class placements can be instituted through laws and parental involvement, in the end it is the way teachers perceive their role in the class and how they respond to the learning and social needs of individual students that is by far one of the most critical variables in both determining the success of integration and encouraging peer interaction. Teachers spend large amounts of time with their students during the course of a school year, and their responses and expectations can have a significant impact on a child's development and acceptance in a group.

As might be expected a review of the literature would reveal both positive and negative teacher attitudes toward both the disabled and the integration of disabled students into regular classrooms (see Curtis, 1985, for a list of references). In a study of teacher attitudes and inservice needs in southern Ontario Hummel, Dworet and Walsh (1985) reported a mean total attitude score,but unfortunately did not comment on the variation or interpret their finding in terms of overall positive or negative attitudes.

There is still a great deal that we might want to know about teacher and administrative attitudes and their perceptions of the effects of integration on students in our schools. Data on questions regarding one's personal commitment to integration, willingness to accept special needs students into a classroom and under what conditions, and opinions on how integration is working in individual classrooms would be very informative. Ringlaben and Price (1981) looked at responses to these types of questions in Wisconsin school districts. Their data are quite interesting, but too lengthy to describe here. A sample of responses showed that 52% of teachers felt mainstreaming was having a positive effect on the special needs students; 22% felt the effect was negative. Twenty-six percent felt that the mainstreamed children were having a negative effect on the other students; 62% felt they were having no effect at all on the others.

Mixed findings are also evident in studies of the attitudes of education students. In a study at an American university Schmelkin and Lieberman (1984) found generally positive attitudes toward mainstreaming, but also reported that little is being done to prepare regular education students for work in classrooms with integrated students. These education students attributed high ratings to the importance of knowledge in the area, but low ratings to the actual knowledge they were receiving.

In a study of education students at the University of British Columbia Curtis (1985) found only marginally favourable attitudes toward the disabled and toward integration, with special education students being more accepting than students in regular education. These students also felt that teachers are not adequately prepared for integration, and that children who are mentally handicapped, severely physically disabled, blind or deaf should not be integrated into regular classrooms. These kinds of findings point to the critical importance of encouraging a commitment to integration through education and exposure to children with special needs beginning early in a teacher's training. This study would be well worth replicating in other universities.

Another line of research in this area has focused on variables associated with positive teacher attitudes toward integration. In one study Larrivee and Cook (1979) found that a teacher's perception of his/her success with special education students was the most significant variable associated with positive attitudes. This finding was replicated in southern Ontario (Hummel et al, 1984). Other factors found to be associated with positive attitudes include the number of special education courses taken (Stephens & Braun, 1980), though in one study actually taking these courses appeared to be related to salary increments and not a desire to take special education courses per se (Ammer, 1984); grade level taught with elementary teachers being more willing to integrate disabled students (Stephens & Braun,1980; Ammer, 1984); and communication and sharing of responsibility between special education and regular classroom teachers (Ammer, 1984).

Hummel and his colleagues (1985) also found direct experience teaching exceptional students to be significantly correlated with implementing individualized teaching strategies with the assistance of resource support. Ammer's (1984) study did not differentiate between teachers who had or did not have previous experience, but he noted that 85% of his sample reported that they provided almost no specific accommodations for students integrated into their classrooms. In addition he found no indication that regular class teachers who had taken special education courses were implementing strategies that might increase the chances of successful performance by mainstreamed students.

In the literature the factor of knowledge about disabled students has generally been associated with the number of special education courses taken (e.g., Stephens & Braun, 1980; Hannah & Pliner, 1983). It would be interesting to see a study designed to look at the knowledge teachers have about the individual children integrated into their classrooms. For example: What is the nature of the child's physical and/or learning disabilities? If the child has a neurologically based physical disability such as hydrocephalus or cerebral palsy, what types of learning difficulties should they watch for? What are the child's learning and social strengths and weaknesses? What strategies can be used to modify the curriculum to meet his/her needs in light of the learning profile? What can be done to enhance social integration? What adaptive materials or devices does the child need?

In recent weeks I have learned of a 7 year old with hydrocephalus and related fine motor problems who is being sent from her Grade 2 class to a Kindergarten for a period of time each day for work on strengthening her fine motor skills so that she can better keep up with written work in the classroom. This little girl's confidence and willingness to persist have suffered this year, perhaps because of an inadequate understanding of the nature of her disability and the fact that her hand skills will never be adequate for the type of classroom performance her teacher is looking for. In another instance the teacher of a multiply disabled teenager with a severe speech problem has refused to support the acquisition of a communication aid because she feels the young woman's speech will not improve if she has an assistive device. This faulty assumption has perhaps led to an unnessessary restriction in the opportunities this youngster has had to communicate with everyone in her environment. There is still so much to be done to maximize the chances of success for disabled children in integrated settings.

SUMMARY AND RECOMMENDATIONS

The movement in our society toward integrating disabled students into more regular educational settings grew from emerging social and moral concerns with equality of opportunity, human rights and individual rights. Decisions and policies have been based primarily on philosphical, legal and ethical grounds without supportive empirical evidence.

The extensive research literature which has subsequently appeared has produced mixed results and continuing debates about the relative advantages and disadvantages of the regular versus self contained classroom for certain disability groups, especially those whose rate of intellectual development or academic progress is significantly slower than that of the norm. One reason accounting for ambiguity and poor generalizability of the empirical data is the inherent ethical and methodological problems in controlling for the innumerable differences between various subject groups or school regions. A second reason may be the reality that the different personal and educational needs of individual students can only be met through provision of the continuum of educational opportunities from full time regular class placements to self contained classrooms.

If, as educators, we are truly committed to meeting the needs of individual students as opposed to disability groups, then perhaps it's time to lessen our focus on questions about the relative efficacy of self contained versus regular classrooms and begin to develop knowledge and implement strategies to better meet the unique learning and social needs of individual students. Many needs can be met in the regular classroom with appropriate resource support. Others will require more individualized and structured approaches which are impossible to adequately provide in the regular setting.

During the course of this presentation the importance of research in the areas of social acceptance, social interaction, self concept, and teacher attitudes and knowledge has also been discussed. In addition, there is a good deal of knowledge about factors which influence or contribute to successful efforts to integrate special needs students (Salend, 1984; Quintal, 1985; Stainback, Stainback, Courtnage & Jaben, 1985). Educators should be looking at whether or not these strategies are present in their own systems and implement those which are absent.

In conclusion there is no question that successful integration benefits both exceptional and non-exceptional students. Special education students should have the opportunity to experience regular learning situations, and to learn to interact with their peers. Additionally, regular students should have the opportunity to experience and accept individual differences within their own lives. However, the reality of mainstreaming is that regular students don't always accept their disabled peers as a natural matter of course and that successful integration is only achieved through the right combination of environmental factors, support services, attitudes of educators, teaching skills, and the personality, learning and social skills brought to the classroom by the disabled student. The goals of special educational research should be to evaluate how our current practices are affecting exceptional students and to learn under what conditions integration will be a successful experience for individual students. The avenues for future special education research in our own school boards are endless.

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POST-SECONDARY PROGRAMMES AND SERVICES FOR EXCEPTIONAL PERSONS: NORTH AMERICAN TRENDS

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Presented at:
The Canadian Symposium on Special Education Issues
Toronto, Canada, March 1986

Post-Secondary Programmes and Services for Exceptional Persons*:

North American Trends

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Introduction:

The original intent of the author was to: 1) review the incidence of physically disabled and learning disabled individuals within Canadian institutions of higher education and, 2) discuss issues of concern with regard to the availability of programs and services specifically geared to the student with physical or learning disabilities within these institutions. This has proved to be an almost impossible task due to the lack of information on the topic as it pertains to post-secondary institutions in Canada. A computer literature search, personal rummaging through volumes of journals related to the topic, and discussions with numerous Directors of Student Affairs and Coordinators of Services for the Disabled at several universities within the Province of Ontario have resulted in the realization that national data simply do not exist on this topic, or at the very least, are extremely well-hidden. Although most Canadian universities have developed some services for the physically disabled, there does not appear to be any centralized data source regarding the nature and extent of such services. Similarly, there are no reliable data readily available describing the number of handicapped students currently enrolled in colleges and universities across Canada, nor the nature of their needs.

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* The term "exceptional persons" was chosen by the organizing committee of the symposium. In fact, the term "exceptional" is not generally used in the post-secondary sector. As used in this paper, the term is synonymous with "handicapped" and "disabled". Further, when not otherwise specified, the terms handicapped and disabled refer to individuals with either physical or mental impairments, including but not limited to, the following; blind or visual impairment, cerebral palsy, deaf or hearing impairment, diabetes, epilepsy, multiple sclerosis, muscular dystrophy, orthopedic impairment, speech impairment, and various forms of specific learning disabilities.

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It should probably come as no surprise that there is indeed such a scarcity of data in this area. Services to disabled individuals in post-secondary institutions are relatively new in both the United States and Canada. Until recently, secondary students with special needs were rarely encouraged to continue their education beyond high school. As a result, only the extremely motivated, highly perseverant, and usually intellectually gifted physically disabled student would consider attempting to enrol in a college or university. Learning-disabled students were even less likely to be university bound, since the prevailing attitude until very recently has been that university-level education was beyond their intellectual capabilities.

Well, as the song says, "the times they are a-changing." The rise in the number of handicapped individuals attending colleges and universities in the United States during the past 10-15 years could be described as meteoric. Concurrently, programmes and services to meet their special needs have been developed and continue to grow. It is important to note that specific Federal legislation introduced in the United States is likely the primary factor responsible for the dramatic change in the number of students with special needs attending American college campuses.

In the remainder of this paper, the author proposes to: 1) review the factors resulting in more disabled individuals attending post-secondary institutions in the United States, 2) contrast these factors with recent developments in Canada and, 3) discuss the implications for post-secondary institutions in Canada, particularly with regard to provision of programmes and services for learning disabled university students.

The Experience in the United States

Whenever major educational, social, and/or political changes occur, one is usually safe in assuming that the changes cannot be attributed to a solitary event. In the case of the increasing enrollment figures for handicapped individuals at American colleges and universities during the past decade, this assumption likely holds true. Certainly pressure from self-help and advocacy groups has played a major role in opening the doors to institutions of higher education for individuals with various handicaps. Also, the projected declining enrollment in higher education during the 1980's as a reflection of the declining birth rate in the 1960's has likely forced university administrators to search for "non-traditional student markets." Enrollment is vital to the financial health of universities and will be a key factor in keeping pace with the projected increase in operating costs (Mangrum & Strichart, 1984). Physically disabled and learning disabled individuals represented a relatively untapped reservoir of potential students to fill the projected gap. On a more humanistic note, one would hope that some college and university officials have become more aware of abiding by the "social missions" of their respective institutions. Rather than simply paying lip service to these missions, one would expect that some have become committed to providing more opportunities for students with special needs to obtain higher education.

Recognizing that many factors were involved, most observers point to the passage of two laws as the major turning point for handicapped individuals wishing to pursue post-secondary education (e.g. Mangrum & Strichart 1984; Nathanson 1983; Scales 1986). The first was United States Public Law 94-142 (PL94-142), initially passed in 1975, with implementing regulations appearing in the Federal Register in August 1977. Known as the Education of All Handicapped Children Act, this law required that all handicapped children be given the opportunity to receive an appropriate education through the secondary level. In addition, the "least restrictive environment" stipulation of PL94-142 has resulted in an increasing number of handicapped students being educated alongside non-handicapped high school students. One could reasonably speculate that the combination of improved awareness of the special educational needs of handicapped students by school personnel and the increasing fraternization of handicapped and non-handicapped students at the secondary level could possibly result in handicapped students developing similar postsecondary educational aspirations and expectations as do their non-handicapped peers.

While PL94-142 does not apply to college level education, Section 504 of the Rehabilitation Act of 1973 which became law in May 1977, does have direct bearing on post-secondary education. This regulation states:

> "No otherwise qualified handicapped individual in the United States shall solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." (PL93-112, 1973, material in public domain).

Handicapped individual is defined as any person who has a physical or mental impairment that substantially limits one or more major life activities. Learning is considered one of the major life activities, and specific learning disabilities is listed as one of the impairments covered in Section 504. Subpart E of Section 504 specifically prohibits discrimination against qualified handicapped persons in postsecondary educational institutions in admissions, recruitment, and treatment after admission. Virtually every college and university in the United States is covered under Section 504.

Scales (1986) points out that under Section 504, access to a college or university education based on one's academic ability has become a right for disabled students, rather than a privilege dependent on the attitude of a particular admissions officer, department, or college administration. In the years immediately following the passage of Section 504 of The Rehabilitation Act of 1973, there has been a dramatic increase in the percentage of students attending American colleges and universities across the United States. Marion and Iovacchini (1983) reported that most if not all post-secondary institutions in the United States had made concerted efforts to comply with the legislation. However, they cautioned that due to limited financial resources most administrators and governing boards have chosen to provide only the minimum required by law. Still, the available data clearly point to the positive effects of the legislation on providing handicapped individuals with more access to higher education. In 1978, approximately 2.9% of American college freshmen were self-identified as being physically handicapped (Lawrence et al 1981). By 1982, Astin et al (1982) reported that this had increased to 5.4%. By 1984, the percentage had climbed to 7.3% (Note 2). This represented an increase of approximately 150% over a six year period.

While it is difficult to guage the effects of the legislation on particular sub-groups within the total group of handicapped individuals, there is a growing body of data which suggests that learning disabled students represent the newest and fastest growing handicapped constituency who will be attending college and university in the next decade. Fielding (1981) argues that learning disabled individuals are perhaps the most undereducated and underemployed, yet high potential persons within our society. He claims that over 16 million adults with learning disabilities in the United States are potential consumers of post-secondary educational services. In 1985, the United States Department of Education reported that 1, 811, 489 learning disabled students were enrolled in special education during the previous school year (material in public domain). White et al (1982) reported that 67% of those students who had been diagnosed as learning disabled while in elementary or secondary school planned to continue their education beyond secondary school. This contrasts with a study done only two years earlier which reported that 22% of learning disabled high school students expected to graduate from college or university (Deshler et al 1980). Most recently, in a publication by the HEATH Resource Centre, data for the 1984 academic year indicated that 1% of all college freshmen in the United States self-identified as being learning disabled (Note 3).

The Canadian Context

While statistics and trends in the United States do not necessarily have direct application to Canada, there are several interesting parallels which may be drawn. As in the United States, pressure groups, declining university enrollment, and "social missions" of universities have all played some role in what appears to be a gradual increase in enrollment of handicapped students in post-secondary educational institutions. However, it has only been within the past year that similar legislation to PL94-142 has come into effect in the Province of Ontario, and that Section 15 of the Constitution Act of 1982 has become law in Canada. These two important pieces of legislation closely resemble the type of legislation which has led to the dramatic rise in enrollment for handicapped students in the United States. In the Province of Ontario, Bill 82: *An Act to Amend the Education Act, 1974* was proclaimed in December 1980, to take full effect by September 1985. This provincial legislation guaranteed that,

> "...all exceptional children in Ontario have available to them...appropriate special education programs and special education services without payment of fees by parents..." (Education Act, Revised Statutes of Ontario, 1980, Section 8(2)).

As with PL94-142 in the United States, this legislation should theoretically result in improved educational services through secondary school for students with special needs within their local school boards. Students with special needs should be better prepared for college level study while at the same time developing increased expectations and aspirations to continue their education beyond the secondary level.

Section 15 of The Canadian Charter of Rights and Freedoms as set out in The Constitution Act, 1982 came into effect in April 1985. This legislation states:

> "Every individual is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability." (Sec. 15(1), Constitution Act 1982, material in public domain.)

While this legislation does not refer specifically to post-secondary education, there are at the very least some legal questions likely to be addressed by the courts with respect to the obligations of universities and colleges vis-a-vis admissions and evaluation procedures which do not unfairly penalize disabled individuals.

It is still too early to discern whether or not the legislation discussed above will have the same effect as comparable legislation in the United States. However, there are some early indications that post-secondary institutions in Canada should be preparing for a steady, and perhaps dramatic increase in the numbers of handicapped individuals interested in pursuing higher education. At York University in Ontario, the number of self-identified handicapped students attending the university has risen from 19 in 1977 to 114 in 1984 (Note 1). The number of self-identified learning disabled students has increased from 5 in 1980 (the first year for which data are available) to 55 as of December 1985. York University has recently received a grant to operate a 3-year pilot project which will investigate the effectiveness and feasability of a comprehensive programme for university students with learning disabilities. Indications are that there is a tremendous degree of interest in the programme and enrollment of qualified learning disabled students is expected to dramatically increase over the next three years.

If data from York University may be taken as an indication of trends at other post-secondary institutions in Canada, one cannot help but wonder how much more dramatic an increase may occur during the next decade now that Bill 82 and Section 15 of the Constitution Act have come into effect.

Future Implications

If one accepts the notion that there is likely to be an increase in handicapped students attending post-secondary institutions in Canada, there are some critical issues which need to be resolved. The success or failure of programmes and services aimed at supporting students with disabilities will likely depend on whether or not university faculty and administrations are able to resolve some or all of these issues.

Generally, handicapped students are confronted with architectural and/or attitudinal barriers within the post-secondary setting. It is beyond the scope of this paper to review the architectural barriers (e.g. lack of adequate ramps, doorway access, washroom access, elevators, etc.) which need to be resolved by post-secondary institutions. Without minimizing their extreme importance, these architectural barriers are likely more easily changed than attitudinal barriers. Nathanson (1983) notes the necessity of taking into account the attitudes and possible biases of all members of the post-secondary community in the process of integrating the disabled into the educational mainstream. Perhaps the most difficult attitude to overcome is the notion that all that matters is one's particular label. This often results in warped thinking which characterizes all individuals with the same label (e.g. "The Blind", "The Deaf", "The Paraplegic") as having the same needs, interests and abilities. Well-intentioned but misguided university personnel assume weaknesses even when they are not present. The tendency is to either withdraw totally and claim the disability is simply too much to handle within the university, or to adopt a "rescue fantasy approach", whereby the student is viewed as defenseless and in need of "protection". Neither tendency is particularly helpful to individuals with handicaps. As Newman (1976) states,

> "One cannot escape the impression that handicapped students do not desire any prominence that would make them stand out among the student body...(They) are already highly sensitive to their being different...(and generally would) wish these differences to be obliterated rather than featured..." (Newman, 1976, p. 196).

Nathanson (1983) concludes that it is inevitable that staff and faculty of colleges and universities will form opinions and hold attitudes toward disabled people since we are all products of our culture. He argues that we must work toward developing an accepting attitude toward human differences and strive to view each disabled person as an individual, not as a representative of a particular label.

As mentioned earlier, students with learning disabilities are increasingly attending universities and colleges, and this trend is likely to persist over the next decade. While general attitudes toward the handicapped may apply to the learning disabilities group as well, the fact that their handicap is "invisible" poses some additional difficulties for them. Although there are no conclusive data at present, it would appear that faculty attitudes toward the learning disabled may be even more difficult to influence than toward students with more visible handicaps. Harrison (1982) reports that professors are often unable or unwilling to acknowledge students' learning disabilities and generally think that these students should not be allowed to attend college. At one university in Ontario, a survey conducted in 1985 investigated attitudes of faculty toward visibly handicapped and learning disabled students. In a personal communication with the author, the Director of Counselling Services at that university revealed that there was a fair degree of willingness among faculty to accept physically disabled students in their classes. However, 90% of faculty respondents did not believe that learning disabled students would be able to handle the course content (the Director of Counselling Services requested anonymity).

In addition to the problem of faculty attitudes toward learning disabled students, at least three other major issues must be addressed in this area. First, reliable methods need to be developed to fairly and accurately assess the presence of learning disabilities. There is still quite widespread disagreement regarding the precise definition of "learning disabilities". Several definitions have been proposed by various authors and interested professional groups. However, a concensus regarding definition has yet to be achieved. Psychological assessment methods have primarily focussed on children with learning disabilities. As a result, a great deal of work remains to be done in the development of valid psycho-educational assessment instruments with adult populations.

Once the identification of learning disabilities has been addressed, the ability of the learning disabled student to cope with the academic demands of the college or university needs to be assessed. Harris (1985) notes that there has been little communication between post-secondary and secondary educational institutions which often leads to problems at the admissions level. He argues that high school transcripts are often invalid and/or highly misleading because they fail to indicate the degree of remedial assistance provided to the student and/or reflect highly sympathetic grading practices. Both for the sake of the learning disabled student and the integrity of the post-secondary institution, it is extremely important to accept only those students who truly qualify for admission. By so doing, college and university faculties and administrations can be assured that their educational standards are not being compromised. At the same time, the learning disabled student who undergoes a fair, but rigourous assessment of his/her academic ability can be assured of a reasonable chance of success in the post-secondary setting.

The third major issue to be addressed must be to determine carefully what constitutes "reasonable accomodations" in both teaching and evaluation of learning disabled students. Goodin (1985) surveyed 586 professionals involved with handicapped students at the post-secondary level regarding 27 statements drawn from the literature on academic adjustments. He reports widely different opinions about various possible adjustments, with highly positive attitudes towards such things as permission to: respond orally to essay exams, dictate test answers to proctors, take a proctored exam in another room, take extra time to complete an exam, tape record lectures. More negative attitudes were expressed towards the following: exemption from academic probation and dismissal policies, allowing proofreaders to substitute higher level vocabulary in a draft, allowing proofreaders to reconstruct the draft. In any case, the issue of reasonable accomodations must be addressed in order to ensure once again that both the integrity of the degree-granting institutions and the learning disabled student remain intact.

Conclusion:

An attempt has been made in this paper to outline the trends which point to an increasing number of handicapped students in post-secondary institutions and in particular to highlight the trends with regard to learning disabled students. Estimates of the incidence of learning disabilities in Canada generally range from 5% to 10% of the school-age population. Until recently, very few learning disabled students were encouraged to attend college or university. Even if one assumes that only a proportion of learning disabled students will be qualified to attend post-secondary educational institutions, this still represents a relatively new constituency in the post-secondary setting. A number of issues have been discussed in this regard. However, perhaps the most crucial question has not yet been raised. That is, to what extent will society demand that colleges and universities provide "special education services" for students with learning disabilities and/or other handicapping conditions? As McLoughlin (1982) writes,

> "Contemporary college instruction is not geared toward the individual student, but at the transmission of a delineated amount of information in a specific area of discipline to large numbers of students." (McCloughlin, 1982, p. 244).

Given the above, many students with special needs will likely require some form of remediation, tutorial and/or other support help at the post-secondary institution. To what extent should universities be responsible for providing such services?

In closing, I quote from the basic principles enunciated in the Ontario Ministry of Education Special Education Information Handbook 1984 (Note 4).

> "All persons have a right to education, society has an obligation to provide an opportunity for education through

> schooling...
>
> Learning is a lifelong process, and every person should be given opportunities to acquire the attitudes, skills, and habits that will enable him/her to derive maximum benefit from the learning opportunities he/she encounters in life..."(p.1)

How far should one extend these principles? The task of deciding the type and degree of support required by the student with special needs is often difficult at the primary and secondary levels of education. It becomes even more complex when meshed with the question of the responsibility of a college or university towards its student constituency.

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The Education of Severely and Profoundly Handicapped Children and Youth:

Some Issues That Currently Need to Be Resolved

by
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presented at

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Preamble

Let me begin by sharing with you two stories. Happy stories.

Amanda is now seven years old. When she was born the medical people said that because of the severity of her disabilities she would die in two weeks. After two weeks had passed the family was told that she would die before she was two years of age. Today she is seven years of age, attending school daily in a K-12 school with 200 other students, and certainly the most severely disabled pupil in that school. She comes from a good home by any measure. In the first six months of school she has demonstrated an amazing ability and motivation to get around, and to communicate through gestures, grunts and other vocalizations. What will her educational experience be like in light of where she is going to school?

William is now fourteen years old. Shortly after he was born he was placed in a permanent foster home, requiring full-time care, only being able to move his head from side to side. Two months ago he was moved to a long-term Level IV Care facility. He attends school daily, and over the last six months a teacher has been teaching him how to communicate using Bliss, through the use of a computer, by pushing a Yes/No stick with his cheek. William has become surprisingly adept at learning the system. Recently he wrote his first independent sentence, "I am homesick." Several things are remarkable about this event. There is no such word as "homesick" on the Bliss system. He had to put two words/concepts together - "home" and "sick." Secondly, no one had really been aware of how much was going in - how much he had been learning over the years because of his inability to express himself.

These two youngsters are severely and profoundly disabled/handicapped. No one argues that. One of the low-key but persistent debates in education today asks the question: What is the extent and what are the limitations in our work with these children, these youth? Surely the limitations are not consistent with our easily preconceived notions. What is the extent to which we go in our involvement with these students? These two students are thriving in school because they have teachers who not only care, in the humanistic sense, but also pursue with a persistent vigour the development of skills, for example, in computer assisted instruction, in seeking information from other professions and keeping an open mind to any possibility, looking for any potentiality.

Before getting into the more formalized part of this presentation, some perspectives, parameters and caveats need be identified.

1. Organizers of this symposium wanted speakers to make reference to current and relevant research from a Canadian perspective, if possible! Well, it is possible and the literature is starting to appear. It is mostly descriptive. There appears to be some limited empirical research happening and reported in Canada as it affects the education of severely and profoundly handicapped children and those who work with them. So, this presentation reflects, in part, that literature.

2. The perspective being shared is from one who has actively worked from within the system, supporting schools and teachers and (mostly, it seems!) administrators in breaking new ground. Seeing many different situations, and having a perspective that crosses school division boundaries, provides the experiential base for what is in this presentation. Thus the issues that will be addressed are selective. You can collect whole libraries on the general topic. We can't cover them all!

3. A brief statement about who it is that we are talking about is in order. Even on the most simplest of criteria, human beings can be difficult to classify! Today, we are considering the child or youth who has limited expressive speech, or has extreme difficulty eating, dressing or toileting, or who can't get around without a wheelchair; or, usually an individual who has a combination of these characteristics. Mental retardation is frequently an accompanying characteristic. We tend to identify the disabled student from an educational perspective, i.e., can he write, talk, play with peers, rather than does he have cerebral palsy or Cornelia de Lange syndrome or spina bifida.

In many ways we are talking about Catherine in Nicola Schaefer's (1982) book, Does She Know She's There; or Norm Kunc (1981) in his book, Ready, Willing and Disabled.

Introduction

The education of children and youth who are severely and profoundly handicapped has become a topic of increasing interest to educators in Canada during the 1980s (Baine, 1984; Csapo & Baine, 1985; Csapo & Goguen, 1980; Forest, 1984; Marlett, Gall & Wight-Felske, 1984; Sobsey, 1985). The role of education and schools in the lives of these children and youth, and their families, continues to draw the attention of analysts assessing the continuing evolution of the larger human service system (Lord, 1985; Simmons, 1982).

Increasing concern on the part of educators in Canada was evident throughout the 1970s regarding the lack of access to services offered by organized education towards all handicapped children and youth (Ballance & Kendall, 1969; Commission on Emotional and Learning Disorders in Children, 1970; Csapo & Goguen, 1980; Treherne, Dice, Grigg & Sanche, 1974). Teachers' federations have developed more than a passing interest in the "mainstreaming" concept (Csapo, 1981; Federation of Women Teachers' Associations of Ontario, 1983; Saskatchewan Teachers' Federation, 1985). Recent federal public policy initiatives, particularly with respect to the Canadian Charter of Rights and Freedoms, has generated considerable interest in the community of Canadians particularly interested in the quality of lives of severely and profoundly handicapped persons (MacKay, 1984).

Thus a further exploration of this topic as a special education issue at this time appears quite appropriate.

In many quarters the perception continues that educators have always been cautious when confronted with a new challenge, and wanting to do the task appropriately if it was determined that it should be done under the supervision of the school. The Canadian experience of welcoming the severe and profoundly handicapped child into the regular education system certainly reflects the cautiousness of educators being confronted with new demands for which they may feel they have limited resources, are inadequately trained or prepared for the task ahead, or, just do not believe that these students belong in the mainstream of education (Forest, 1984). Underlying many of these reactions are attitudes counterproductive to the task at hand.

There still is no consensus in the literature on how to positively modify attitudes which presumably would enhance the quality of services available to these students (Barton, Snart & Hillyard, 1985; Donaldson, 1977; Towner, 1984; Winzer, 1985). As a general observation, it appears that over the last twenty years there has been slow but increasing acceptance by educators of their responsibility towards children and youth frequently classified as severely disabled. Does this reflect a change in attitude? There certainly has been a change in practice in those twenty years. Can one assume that educators will adjust to the presence of the child who is "deaf", "blind", "emotionally disturbed" or "trainable mentally retarded"? The following observation by Haring (1985) lends support for some optimism:

> In 1977, the Division on Mental Retardation of the Council for Exceptional Children published a volume, conceived and edited by Ed Sontag, entitled "Educational Programming for the Severely and Profoundly Handicapped." This volume has been one of the most widely disseminated and influential works of its kind in the history of special education. (p. i)

The very wide distribution of such a document reflects that it continues to meet a need out in the larger community.

Administration

With increasing frequency community schools are accepting the challenge of meeting the educational needs of these children and youth who are severely and profoundly handicapped despite equivocal research to support this thrust (O'Neill & DeBruyn, 1984). One major implication for the administrators in these schools is the need to bring some "background" to managing people, resources and issues that inevitably arise in these situations. School principals and system administrators today do not have, generally speaking, an experiential base in managing situations that included this type of student. They did not teach in environments where these children attended. In addition, there has not been much opportunity in Canada to obtain formal training in the administration of programs that are directed at children and youth who are severely and profoundly handicapped (Csapo & Baine, 1985; Dahl, 1985; Sonntag, 1982).

Csapo and Baine (1985) state it rather succinctly:

> To insure successful integration, not only within the school but also within the community, administrators need to be familiar with the nature of the handicap, the needs of the students with severe handicaps and the methods by which these needs can best be met by both school and community. Programs are also required to train school psychologists, occupational, physical, and speech therapists, social workers, lawyers, nurses, physicians and dentists to meet the needs of students with severe handicaps and assist them to function within natural community environments. (p. 130)

Children and youth who are disabled are no longer, or, much less frequently, congregated in larger institutional settings. Frequently the training programs of future professionals reflect service delivery patterns of past eras. The updating and/or expanding of undergraduate or graduate training programs in Canada to include a focus on administrative issues as they pertain to this group of students with very challenging learning needs is long overdue.

Another facet of the work of administration is the need for administrators in special education to become much more involved in the planning, support, and implementation of in-service or staff development activity (Berreth, Beatty & Burrello, 1982). Many of the issues and practices identified in this paper reflect the need for continuing efforts to provide staff with the training and opportunity for new experiences to enhance the growth we wish to see in qualitative improvement in educational programs for students who are severely and profoundly handicapped.

Placement Practices

The placement of students in programs where the objective is to meet the educational needs of these students has become the focal point for much debate. Traditionally these students did not receive services in neighborhood schools. New practices are emerging.

Data from one province with which the writer is most familiar clearly indicates that many more educational leaders are now involved in the day-to-day management of programs for these students (see Appendix A).

As this data shows, the number of pupils who are severely and profoundly handicapped and attending school in segregated settings has remained fairly static in Saskatchewan since 1978, when the Saskatchewan Department of Education was given administrative responsibility for programs for multiple handicapped students. These programs had previously been operated under the mandate of Saskatchewan Social Services. Students and their parents having come into the system since that time have obviously exercised a greater number of options in terms of placement. In many rural areas, these students have begun attending the community school, frequently at the insistence of parents who were not prepared to move them to congregated programs outside of their immediate communities. For the last three or four years, many of the children entering the education system have been obtaining home-based services through the Early Childhood Intervention Programs. The knowledge that the parents of these students have acquired about their children's development, combined with a set of expectations developed through more systematic involvement with human service diagnostic and assessment agencies and related service providers, has translated into strong advocacy on behalf of the child by the parents and preschool support services. Thus school systems have been hard pressed to maintain traditional placement practices. In turn, the rhetoric picked up by the media, advocacy groups and the parents themselves regarding normalization, integration and mainstreaming is today having its impact felt in virtually every school in our society.

A great amount of an administrator's time is spent in planning, facilitating and coordinating the provision of services and supervision of ongoing services for all students. The decision to place a child or a group of children who are severely and profoundly handicapped in a neighborhood school gives rise to new dynamics that frequently have not been experienced heretofore by the staff in those locations.

By the very nature of the child that now enters the school, a number of different professionals have become part of the action. Frequently they are employed by different agencies or departments of government. They are part of the human service system. They work under different administrative rules, adhere to their profession's codes of ethics and standards of professional practice with which educators are unfamiliar. The agencies they work for frequently respond to new demands for service emanating elsewhere in the human service system. Thus, how we as educators are to provide the continuity and predictability of quality service in this arena is of increasing concern. In the United States the issue of the provision of related services has led to a number of legal tests. The judgements of the courts provide no clear direction or emerging consensus about the place of related services in education (Lehr & Haubrich, 1986). Since policies and practices at one level of enterprise depend on the policies and practices at other levels of governance, a shift in policy or practice anywhere in the system will have a ripple effect. When viewed from the perspective of a decade ago, as an example, the change in policy in the mid 1970s by Saskatchewan Social Services, whereby there were to be zero admissions of children to the provincial institution that had traditionally served individuals who were severely and profoundly handicapped, has had a continuing, occasionally unsettling, impact in local communities across the province. This impact has been felt throughout the human service system, not just organized education.

Human service system administrators, including educational administrators, who did not or have not picked up on the philosophical winds of change underlying these changes in practice and policy frequently find themselves subject to inordinate pressures from the community, their staff and, occasionally, their superiors.

One aspect of the infrastructure that supports educational programming for these students relates to the need to coordinate support services at the school level.

A recent major review of curriculum and instruction in Saskatchewan identified the critical aspect of this need in its final report, Directions (1984):

> When children come to school with needs which impede learning, teachers have little recourse but to attend to those needs. Without support services, the task is prohibitive.
>
> There is currently no one person or agency who works with parents and providers of services to see that all needs of a child are met, and to ensure that services are not overlapping or working at cross-purposes. Perhaps the most important observation that the Committee made was that, unless these services are coordinated at the local level, and unless people are involved in decision-making, the services will probably not be of benefit to those who need them. (p. 22)

Leadership efforts need to be directed at coordinative activities that cross services, cross agencies and cross levels of responsibility. The need to focus these efforts at the school level should certainly be a priority. Having the most up-to-date information on how to access services and availability of services is much more feasible given current capabilities in the electronic transmission of information and data.

How the required service is delivered in a given setting is another issue. Frequently severely and profoundly handicapped children need to engage in activities that traditionally have been monitored, even delivered, by many different professions, such as speech pathologists, physiotherapists, occupational therapists, social workers, and others. Baine & Sobsey (1983) have identified the transdisciplinary model as a conceptual frame of reference, which suggests that students, while in school, receive what they need exclusively through the teacher. Related service professionals assess and demonstrate, but the day to day instruction and implementing of the recommendations are carried out by the teacher - at least that which can be done in the school context.

The transdisciplinary model should facilitate greater continuity and practicability and provide a more coherent, less disjointed approach to the student's program and progress than that experienced under interdisciplinary or multidisciplinary models.

Planning the Individual Educational Program

Planning an individual educational program for children and youth who are severely and profoundly handicapped cannot be done without taking into account that person's total life circumstance and the values and wishes of the primary caregivers (i.e., the parents). We may have heard of the six hour retarded child. The population we are discussing today presents needs that can only be met most effectively when taking into account a twenty-four hour perspective.

There is an immediacy to what the child or youth needs to learn. Development of basic functional skills like communication, whether verbal or non-verbal, dressing, eating, toileting, movement, and so on, need to be addressed in the planning of the student's educational plan. The parents or other caregivers have a vital interest in the training of these skills, keeping in mind the eighteen hours a day the child is not in school. Obviously the planning of a program for such a student need involve, directly, the student, parents, other caregivers and the myriad of support professionals who are part of the service delivery system as it regards a particular student (Cypher, et al., 1984). It appears that many more educators need much more experience in integrating educational oriented planning with the type of planning advocated by Green-McGowan and Kovacs (1984). This relationship will not be easily established on a systemic basis, though we now find an occasional school principal who enthusiastically supports it, seeing the short, medium and long term benefits to the student and his community.

Despite the fact that the vast majority of professionals and service agencies are congregated in urban areas, and despite the fact that rural areas have lagged behind in gaining easy access to the array of services frequently needed, due to a lack of qualified personnel, lack of comprehensive support services, and the difficulties encountered in coordinating geographically dispersed services (Helge, 1981; Singer, Close, Irvin, Gersten & Sailor, 1984), it is in rural areas where breakthroughs are being made in the type of comprehensive based planning and follow through envisaged here (Wheatlands, 1985). Consumer awareness of the possibility of such approaches and satisfaction with the outcome of individual planning efforts should encourage educators at all levels. The interface between a system's approach to program planning and delivery, and the planning around the unique strengths and needs of individuals continues to create tension in organized education. It seems to the writer that the continuing interaction between these two approaches to planning may be the vehicle whereby organizations and programs begin to develop the flexibility required in responding appropriately to human need.

Some Conclusions

Several issues need to be addressed in a direct and forthright way in order to enhance the quality of experience of the severely disabled student, and, to enhance the further evolution of our part of the human service delivery system.

1. Transitions: Schooling cannot occur in isolation for these students. The students are part of a larger community and all schools are part of that community. One transition point that requires facilitation and close monitoring is the transition from preschool services to school based services. Going to school is not a choice in Canada. Because school attendance is mandated by law, school systems are given certain responsibilities, for example, the power to organize programs and services with the resources available to them. Meeting individual needs in this context as these needs are currently understood has become a major challenge to school systems.

A second transition point is the transition from public school to post secondary education programs or other adult services. Certainly the role of the parent changes through this period. The person who is severely and profoundly handicapped becomes an adult in his own right just as other young people do. This transition is also frequently very difficult for the teacher. Educators have always been concerned about how ready their charges are for what lies beyond the relatively sheltered environment of the school.

2. Case management: Who, in organized education, is responsible for seeing to it that all the right things occur for a given student? Is it the teacher aide, teacher, principal, consultant, and/or administrator? How can consumers be helped in understanding the shared nature of responsibility in education? In addition, as discussed earlier, many different professionals and agencies frequently have a legitimate stake in the ongoing care and development of the disabled individual. How can we, in education, better manage this function?

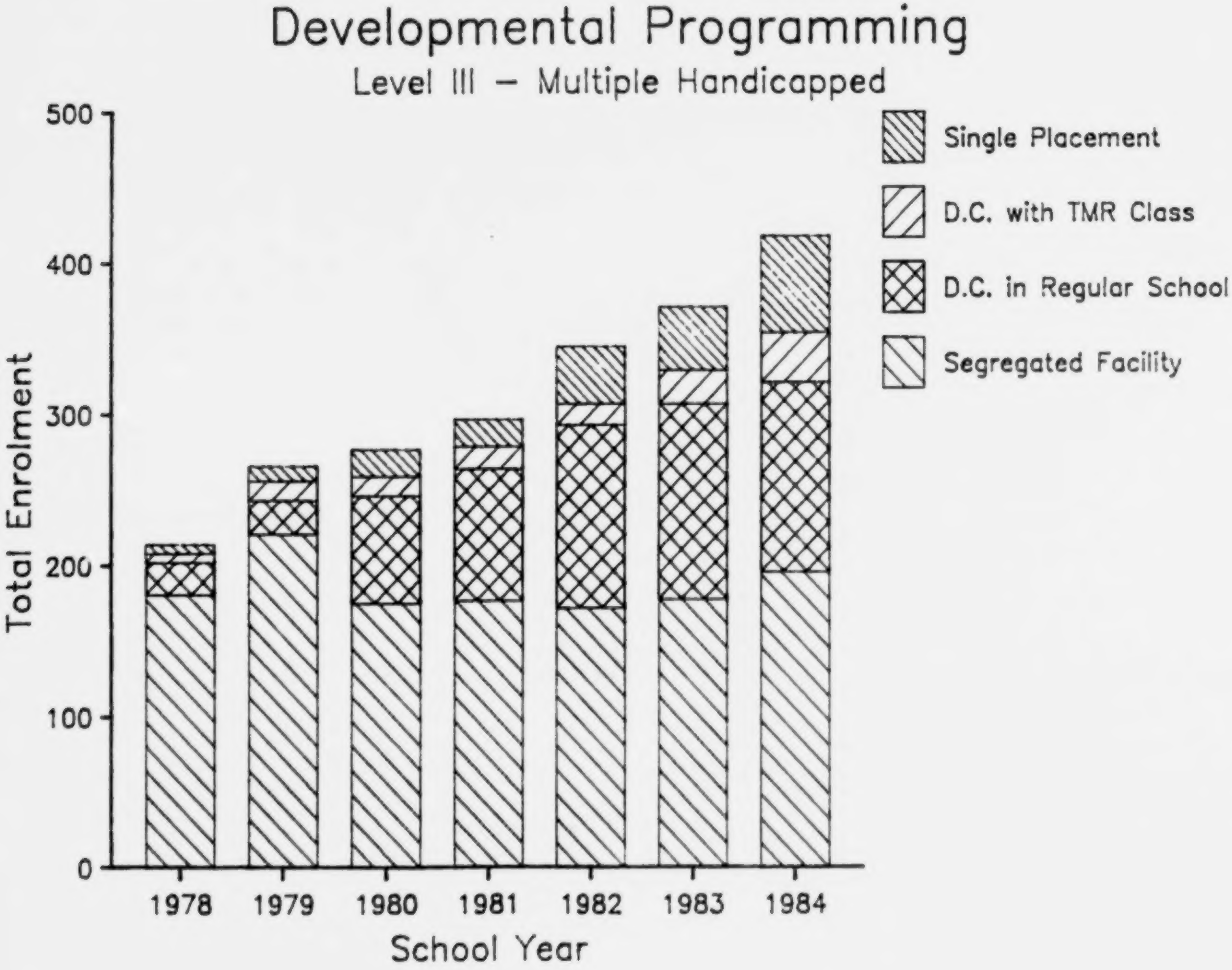
3. Education and related services: Traditional lines are becoming increasingly blurred when we try and differentiate "education" and "therapy." Community based service systems has come to mean services being provided in milieu, rather than in a clinic. Perhaps the issue of where children receive services needs to be re-examined in light of the development of the transdisciplinary model of utilizing support/related services.

4. Teacher training: All teachers are required to develop greater sensitivity to the myriad of issues that arise if these students are to be served in community schools. This certainly has implications for the pre-service training of teachers. Intensive training programs for special education teachers at both the undergraduate and graduate levels need to reflect the changes addressed in this paper.

5. Exemplary practices: For several years, the Council of Administrators of Special Education, Incorporated (1981, 1982, 1983) published examples of peer nominated exemplary practices. We need, in this country, to utilize or create structures that will identify and disseminate information about exemplary programs and practices. Exemplary programs and practices exist in Canada. Given the pluralistic nature of emerging values and beliefs regarding programming for severely and profoundly handicapped children and youth,

educators need to observe existing programs and create new programs and practices that are responsive to changing community values and beliefs. Given the current political climate regarding special education issues, educators need to draw on the resources and experiences from a wide array of practitioners.

Appendix A


Developmental Programming
Level III – Multiple Handicapped
Single Placement
D.C. with TMR Class
D.C. in Regular School
Segregated Facility
Total Enrolment
500
400
300
200
100
0
1978
1979
1980
1981
1982
1983
1984
School Year

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THE FUTURE IS NOW: IMPLICATIONS FOR THE DEVELOPMENT OF (SPECIAL) EDUCATION LEADERS

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THE FUTURE IS NOW: IMPLICATIONS FOR THE DEVELOPMENT OF (SPECIAL) EDUCATION LEADERS

T.R. Posno

> "DESTINY IS NOT A MATTER OF CHANCE: DESTINY IS A MATTER OF CHOICE." - Anonymous
>
> "MAN IS LIMITED NOT SO MUCH BY HIS TOOLS AS BY HIS VISION." - Pascale & Athos (1981)

In discussing a topic such as has been assigned, I think I would much prefer to simply list the above stated quotations; rearrange the seating into groups of six; and then move freely amongst you so that I may share some collective of your analysis and synthesis of the issues which we must address. However, that is not the case, for I have not only been asked to speak to you, but I must also inflict my thoughts upon you in writing.

Possibly the best way to begin is with a favourite quotation from a delightful publication entitled, Teaching as a Subversive Activity by Postman and Weingartner (1969) which, like most sound thinking, is as relevant today as it was seventeen years ago.

> This (presentation) is based on two assumptions: one, it seems to me is indisputable: the other, highly questionable. I refer to the beliefs that (a) in general, the survival of our society is threatened by an increasing number of unprecedented and, to date, insoluble problems; and (b) that something can be done to improve the situation. If you do not know which of these is indisputable and which is questionable, you are attending the wrong session. (p. xi)

Now I am no "doom and gloomer." On the contrary, I share with you an indefatigable and not so common ability to transcend our difficulties and view problems much as the ancient Chinese are purported to consider crises...as creative opportunities. I agree entirely with John Naisbitt (1982) when he suggests that recognition of existing and anticipated problems and issues enables strategic planners to identify trends which can be utilized as power and momentum for the implementation of planned activity. In other words, trends are but the winds by which we can set our sails to steer our chosen course.

Before talking about some of these problems and trends, I must take a few minutes to discuss the nature of people and the prospect of change. In The Third Wave, Alvin Toffler (1980) attempts to be much more optimistic and not nearly so fearsome as he was with his earlier book, Future Shock (1970). Toffler establishes a concept of change as a natural and normal process of living. We must change to exist; we must change more to prosper; and to not change is to wither and regress below subsistence. He sees people considering the prospect of change as falling into one of two major perspectives...creators and reactors. Reactors are those who not only resist change, but deny the future, denigrate the present, and look for virtue in a former era which only exists in their imagination (Kozol, 1984). Creators, on the other hand, not only seek every opportunity for change but also go out of their way to create opportunity for change. They tend to see problems not as pitfalls, but as stepping stones opportunity has provided for crossing the stream.

I have no difficulty in accepting the distinction between creators and reactors, but like many others, I find, particularly in education, a third group. A set of "mugwumps"--those whose fat posteriors are so firmly planted on a fence, watching the reactors react and the creators create, that they cannot decide which way to lean. All too frequently it seems that so much of the inertia within our system comes from those who have a responsibility to lead but are so concerned with the possibility of misfortune that their eyes are firmly locked upon a rearview mirror as they attempt tentatively (if at all) to drive ahead. Or as Michael Fullan states in The Meaning of Educational Change (1982) "...reforms will fail when those responsible spend too much time making decisions...the phenomenology of change--how people actually experience change is distinct from how it might have been intended--is at the heart of (a) spectacular lack of success. (People must recognize) that change is a process rather than an event." (p. 24)

Forgive me for taking the time to share this very limited perspective on the prospect of change, but if the rest of my remarks are to have any meaning at all, you must appreciate my desperation to share perspectives and possible solutions with those of us who have similar needs. With the final implementation of Bill 82 in Ontario, I am afraid of being engulfed in a returning tide of complacency about all matters related to special education and I am becoming concerned about a seeming increase in reactionary comments I hear from my colleagues such as "if it ain't broke, don't fix it." Is that not the plea of a "mugwump" looking backward? If it is, then it is another indication of support for the contention from the 1983 report, A Nation at Risk "...the educational foundations of our society are being eroded by a rising tide of mediocrity." If we're not constantly seeking improvement: if we must wait for breakage, it will be too late and we will have failed in our mission to provide leadership.

Let's direct our attention to some of those issues we can anticipate as creative opportunities in our planning for the year 2000. Not that I wish to spend a great deal of time 'knashing my teeth' and 'beating my breast' about problems, nor am I going to offer much in the way of possible solutions, but I do wish to point out some of the sign posts which must be considered in subsequent discussion in more amicable environments immediately following this session. These issues will be countenanced in four major headings: Mandatory Legislation, Privatization, Organizational Change, and Making Special Education Regular.

MANDATORY LEGISLATION

"YOU CAN'T LEGISLATE RESPONSIBILITY"

- Bergman, 1978

For those of us in the Province of Ontario, 1985 represented a vintage year, i.e. the final implementation of Bill 82. But this Act to Amend the Education Act mandating school boards in the Province of Ontario to "provide an adequate educational program...for all students...appropriate to identified needs...at public expense" represents a beginning...and not the end. In The Report of the Commission on Private Schools in Ontario (1985) many submissions received from private, public, and professional sectors indicated a general disbelief in the ability of public education to fulfill this mandate. For example, "it was argued that, despite the enactment of relevant legislation, the majority of public boards neither will be able nor can be expected to be able to provide for the needs of all children." (p. 35)

In the recommendations section of the same report, the Commission advises, "that although the individuals and groups concerned with special education seemed thoughtful and reasonable in their approaches, they also seemed wary of the integrity of the others and apprehensive about the full implementation of Bill 82. This apprehension or wariness seemed to arise from the quite different perspective from which each group views the expectations created by Bill 82. Parents and their representatives understand the expectation of 'appropriate programs and services' as the provision of the very best available regardless of the cost. School board personnel, on the other hand, view the provision of appropriate programs and services as those that can be reasonably delivered." (p. 65) My personal observation of the expectations of many school boards is such that reasonably delivered means the least that can be provided at the least possible cost. How far does one go in reducing expenses before a program or service becomes a mere token--not even barely adequate and certainly a long way from the expectation of the best available? How many parents of pupils with ordinary needs would be content with the least and cheapest possible program? In order to deal with this problem, the Commission recommends:

> 48. That subsection 8(2) of the Education Act be amended to specify that appropriate special education programs and services are those that, within the limits of a Board's resources and other responsibilities, provide each child with the opportunity to reach his or her potential. (p. 65)

This "unfortunate retreat" drives a big hole into the intent of the original legislation. If such a legislative retreat is provided, the Commission subsequently recommended an additional "escape valve" in recommendation 49 which would permit a school board to purchase a program from an independent school that is also approved for special education. Recommendations 50 to 54 deal with specifications about cost sharing, residential settings, approval of independent schools, and access to appeal procedures and identification placement and review committee (IPRC) processes. Not that costs weren't considered, the Commission estimated $2.3 million just for the annual, extra expense of the IPRC process of independent school students.

If the Commission's recommendations are implemented, I have little difficulty visualizing the opportunities for private school operators and lawyers, but my real challenge lies in planning and creating opportunities for the public system of which I am employed.

A somewhat related but substantively different concern lies with those who believe the rights of exceptional youth to be protected with the implementation of mandatory legislation. In commenting upon the Sixth Annual Report to Congress on the Status of Education and Related Services for Handicapped Children and Youth, M.M. Gerber (1984) stated:

> ...special education professionals and elected representatives alike seem to be increasingly perceiving policy and legal doctrine as if they are the content and and method of 'special education'. (p. 209)

Authorities must recognize that mere provision of law and policy is insufficient. Implementing a system wide special education plan; providing the substance of due process; and ensuring a provision of legal protection are, in themselves, window dressing for the provision of special education. Bureaucratic process and paper does not constitute learning. You cannot legislate responsibility and leaders must realize that laws and regulations do not develop appropriate educational practices and teacher capabilities.

However well-intentioned, a prime example of this misdirection has been a head-long rush in some jurisdictional areas to implement Individual Education Plans (IEPs) in accordance with the American model regardless of the concerns and errors which have been so thoroughly documented. Possibly the most flagrant misjudgment in this respect, is the legislative requirement to devise annual instructional objectives and method by a committee comprised of 'experts' who are usually some distance from actual classroom practice and lack any hands-on experience with the pupil in question. American teacher unions immediately branded this aspect of the legislation as an abrogation of teacher responsibility. Far better be it for a 'committee of experts' to devise a description of the student in terms of educational needs and then assign the problem of program planning (instructional objectives, method, and evaluation) to the teacher or staff who will be actually providing instruction or service.

As if this misstep was not enough, many authorities have rushed to the computer for assistance in devising psychological profiles, educational diagnosis, and IEPs. While most have proffered concerns about a paper work jungle, I suspect that much of their motivation comes from a desire to minimize legal risk by standardizing and limiting comment and exposure. Certainly concern about staff load is laudatory, but the key to this conundrum should be emphasis upon assistance from the computer and not computerized replacement of human judgment and personalized attention. Possibly the most effective way to increase parental wariness and apprehension is to hand them computerized reports and educational plans. Parents value and pupils require the creative toil of a caring and committed professional.

"*THE WISE ARE NOT LEARNED AND THE LEARNED ARE NOT WISE.*"

- Lao Tsu, ancient Chinese philosopher, as quoted by Bennett W. Goodspeed, 1983

PRIVATIZATION

An advertisement in my local newspaper, The London Free Press (1986.02.10) stated:

> Your Child Will Gain One Full Grade Level in Just Thirty-six Hours...Guaranteed.

Time Magazine headlined an article on education (1986.02.03) as:

> Teaching the Three R's for Profit.

It typified other newspaper advertisements with, "Is your child caught in a failure chain?" and "Give your kids an unfair advantage." It went on to say, "Both pitches are aimed at the same customers: parents with cash and the desire to bring a lagging school-child up to speed or to put a bright youngster ahead of his classmates. In the past few years such appeals have been pulling thousands of pupils (including a smattering of adults) into private, for-profit learning centres, which are spreading across the country. It quoted one ebullient owner as saying, "It's an American response to an academic problem...you can solve this problem and make money too."

In The Year Ahead 1986, a prophetic John Naisbitt quoted a report issued by the Carnegie Foundation for the Advancement of Teaching as stating that, "nearly $60 billion a year will be spent on corporate-run education. In the year ahead, the reprivatization of America will become a swollen tide of private industry rushing in to fill the gaps left by Federal government budget cuts, local governments' inability to finance basic public services, and consumer demand for quality service and greater accountability." (p. 117)

Closer to home in a brief submitted to the Commission on Private Schools in Ontario (1985), Sheila Morrison, a proprietor of a private school for learning disabled students stated:

> The Ministry of Education generally, and school boards in particular, have failed, and are still failing, to provide adequate education for the learning disabled student. The greater injustice lies, not in the inability to provide programs, but in the refusal to admit appropriate programs are not available, thus effectively cutting off all possibility of the student obtaining alternative help. (p. 03)

In another brief to the same Commission, the Ontario Secondary School Teachers' Federation, District 1, stated:

> At this time, local boards and teacher groups are concerned that provincial funding will not keep up with these extra demands on the education system, and students without special needs should not be made to bear the burden. (pp. 5-6)

How many parents, frustrated with the plodding slowness of public education to respond to affirmed need, will seek private opportunity? How many parents, disappointed with special classes and inadequately supported mainstreaming, will insist upon private schools for their learning disabled or gifted/talented children?

I am not suggesting that public education authorities should abdicate their responsibility and turn to private means to provide the answer. But examples of private enterprise and initiative can be used by public educators as pivotal posts to do it smarter, better. After all, public education has a monopoly...or does it?

> "AN OBSTACLE IS BUT AN OPPORTUNITY TO CLIMB HIGHER OR A NEW PATH TO LEARNING AND ENDEAVOUR."

ORGANIZATIONAL CHANGE

Most educational jurisdictions could be characterized as having stable (and conservative) organizational structures which have remained in place for long periods of time even with turnover of senior administrators and elected trustees. With the advent of school board consolidation, most have evolved into a multi-layered hierarchy of departmental structures firmly welded into place.

In his prologue to The Adaptive Corporation, Alvin Toffler (1985) speaks of, "the museum of corporate dinosaurs." He says:

> Some firms are already beyond rescue; they are organizational dinosaurs. These are non-adaptive corporations, many of which will disappear between now and the not-too-distant turn of the century. For many of these firms 1955-70 were years of almost uninterrupted, straight-line growth in an equilibrial environment. Managers looked smart--indeed they very often were smart--if they simply did 'more of the same.' (p. 01)

We need adaptive, flexible school systems utilizing organizational models, which support (not control) school function. System executives may have to 'de-construct' and recreate organizational support as an on-going process in order to maximize maneuverability. Today's leaders must be experts, not in bureaucracy, but in the coordination of ad-hocracy. The adaptive leader must be capable of radical action--willing to think beyond the unthinkable: to reconceptualize procedures and programs before crisis results in some inescapable reaction. Successful leaders anticipate the right moves; not movement from fright.

In The Search of Excellence, Peters and Waterman (1982) suggest "loose-tight" organizational structures: i.e., an organization which supports departmental autonomy, and authority to be creative (and to make mistakes), but bound to an absolute adherence and accountability to commonly held (and frequently expressed) corporate beliefs and values. The most common quality of successful corporations over the past decade, was a complete dedication to the value of customer service.

While generally never advocating that educational organization and management should be based on business practices, it is refreshing to note such advocacy for principles of corporate management which should be the basis of educational jurisdiction throughout the country.

After a long era of establishing standardization and homogeneity, many school systems are now considering how to decentralize control and establish school-based management practices. Where will this lead special education? Will school-based budgeting result in a case-contracting for services for the identification and programming of exceptional pupils? Will high-cost, low-incidence programs be threatened because there is insufficient recognition of need at the level of school decision-making? Will mainstream programs improve because schools recognize the need for additional resources to support meaningful and effective classroom activity? How will specific professional expertise be identified and nurtured in the micro-prospective of a school? Will practices of school-based decision-making promote a resurgence of the evils of categorical funding?

There is little doubt that we are entering a time of turbulence, but it's greatest danger is a temptation to deny reality. The new realities are perceived as threats. They do not mesh at all with 'what everybody knows'. But a time of turbulence is also one of great opportunity for those who can understand, accept, and exploit the new realities. It is above all a time of opportunity for leadership. Peter Drucker (1980) suggests that we can negotiate the sea of turbulence if we remember to manage the fundamentals by focussing on opportunities, developing strategies, and committing action.

MAKING SPECIAL EDUCATION REGULAR

> "A TEACHER'S ROLE IS TO ENABLE A CHILD TO BECOME ALL THAT S/HE MAY BE."

It is possibly ironic to understand that I am totally committed to making my job redundant. If the intent of all mandatory legislation is to be fulfilled, it must be realized that special education must become assimilated as part of the normal function of a school. This means the complete extinction of the all-too prevalent naive RCD (referral, classify and dispose) Reflex. When teachers and principals accept the responsibility of identifying and programming of students with exceptional needs as a normal part of common practice (and not as special education with all its attendant mythology of expertise and extra resources), then, "ours is the Earth and everything that's in it" (Kipling, 1920). When every teacher, upon accepting the responsibility of an exceptional child, says, "I want to" with the confidence of knowing s/he can, then special education will be regular...and vice versa.

I have deliberately not prepared this paper with an assumption of academic objectivity. On the contrary, this is a biased, personal statement with consistent referral to "I, me, we, us." Much to my chagrin, I discovered a few years ago, that "I" was designated as a leader and I could no longer look to "they" or blame "them" for what had to happen. I am prejudiced in my belief that we can do something. The problems and issues I have identified are real, and no doubt we could add many more to the list, but they have been offered here as examples of "creative opportunities" begging our solution. I have refrained from offering possible solutions because this meeting is, in itself, a "creative opportunity." I am anticipating with considerable relish our subsequent discussion and sharing of possibilities. In closing, permit me to add one more favourite quote from George Bernard Shaw...

"SOME SEE THINGS AS THEY ARE, AND WONDER WHY; I SEE THINGS AS THEY MAY BE AND ASK, WHY NOT?"

When we reach the year 2000, let our hindsight be countenanced with joy and pride, for what will be...will be that which we have wrought.

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THE CHARTER OF RIGHTS AND SPECIAL EDUCATION:
BLESSING OR CURSE?

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THE CHARTER OF RIGHTS AND SPECIAL EDUCATION: BLESSING OR CURSE?

*A. Wayne MacKay

Will the Charter be a blessing or a curse for special education in Canada? Who will benefit and who will lose? In addressing these broader questions this paper will examine the nature of the Charter, the reasonable limits on the Charter rights, and the remedies for violations of these rights. It will also speculate on the impact of applying the Charter to education law and policy with regard to children who have special education needs.

The following specific issues will be addressed:

1. the constitutional right to education, including problems of access, the appropriate content of education, special education rights and related services;
2. the classification of students and constitutionally fair procedures;
3. the confidentiality of and access to curriculum programs, students' records and reports;
4. discipline and treatment of students with special needs; and
5. the potential for malpractice suits and teacher accountability.

I Introduction

The Canadian Charter of Rights and Freedoms was crafted in the context of the strengths and weaknesses of the United States rights jurisprudence, the disappointing Canadian experience with our own Bill of Rights (1960) and from the political compromises leading up to its passage in 1982. The Charter allows for judicial intervention into governmental action, including educational decision-making, where traditionally only experts held sway. This alarms many educators.

The 1985 arrival of section 15 which guarantees equality rights, has been upsetting to some educators. Even a casual perusal of section 15 suggests a host of possible challenges to the existing education system. School boards discriminate on the basis of age at both the lower and upper limits for education. Sex discrimination in school athletics programs are still widely practiced. There are still many forms of discrimination in respect to teachers. Educators are saying that they are acting reasonably and that they do not have the necessary funds to advance equality in its fullest sense.

Educators are understandably reluctant to have lawyers too heavily involved in the shaping of education-policy in Canada and thus regard the Charter generally and the equality provision in particular, with considerable fear.

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Canadian tradition has been to resolve education issues in the political rather than the judicial arena. Courts, as part of their deference to the parliamentary process, have taken a hands-off approach to the decisions of school boards and school administrators. It is unlikely that lawyers and judges will quickly assume a new interventionist role. However, educational decisions which clearly violate the Charter, may force the resolution of education decisions through legal channels. This judicializing of education is a mixed blessing which will encompass both benefits and burdens for educators. The Charter also has the potential to enhance the development of Canadian education. There is an opportunity to be seized as well as an obstacle to be surmounted.

In the United States, the courts have been viewed as the logical forum for enforcing rights - educational and otherwise. Mills v. Board of Education (1972) is a landmark case in the educational rights of the mentally handicapped. A group of parents brought a class action seeking an injunction to prevent the exclusion of their seven exceptional children from the school system. The court concluded that there was a duty to provide an appropriate education for each child implicit in the compulsory attendance provision. Inadequate funding certainly cannot be permitted to bear more heavily on the "exceptional" or disabled child, than on the normal child. Such logic is applicable to all provinces which have similar compulsory attendance provisions in their Education Acts, subjecting parents to criminal style penalties. Also the American courts, in a number of "due process" cases, including P.A.R.C. v. Commonwealth (1971), have established rights to procedural protections before a child is excluded from a regular class or stigmatized by a label.

With the arrival of the Charter we will see disgruntled parents, who have become frustrated by the "quiet diplomacy" approach, prepared and willing to go to court. As J. Anderson (1985) and others predict "legal work will surely multiply in the next decade in the area of "schoolhouse law". However, it will not be to the same extent or with the same frequency as we see in the United States. This is due to our historical differences. The United States grew out of political and social revolutionary fervour and favours individual rights; whereas the Canadian experience has been quintessentially British with emphasis on preservation of social order. It is commonly accepted that Canadians are a more deferential people and consequently not as litigious. Whether this is really a matter of deference or not, the courts have not been a major policy forum.

It will be argued later in this paper that there is a right to education implicit in the Charter. The United States courts have rejected the claim that there is a constitutional right to education and instead such claims must be grounded in statute law. This may be another important difference between Canada and the United States, with the rights balance tipped in Canada's favour. Indeed, the express protection of the rights of the physically and mentally disabled coupled with claims to a constitutional right to education, may present a judicial as well as moral claim to government funding. The Charter's equality provisions offer an important tool for promoting the rights of the disadvantaged in Canada.

It is the open-ended nature of section 15 that intimidates both educators and lawyers. Courts, however, should not be seen as the enemy but rather as a new partner in the educational enterprise. There is a danger of introducing too much legalism into education but the best way to avoid this is for the educators to attempt to put their own houses in order. If school boards, school administrators and teachers evolve a plan for implementing equality in the schools, the courts are less likely to interfere. The Charter has already caused many school administrators to modify institutional procedures and requirements, so as to avoid future legal problems. Educators may be more progressive in anticipating Charter challenges, than judges would require them to be.

As Cruickshank (1986) remarks, educators, like policemen, prison guards, tax collectors and Crown prosecutors, will learn to accomodate, if not embrace, the Charter and to live with the inevitability of litigation. Those who accommodate it best, will be those who appreciate that individual rights cases can improve the education system for generations to come. The courts are a new partner in educational decision-making.

II The Nature of the Charter

The Charter is part of Canada's patriated Constitution. In 1982, Canada adopted an entrenched package of rights which can only be changed by constitutional amendment or the proper use of the legislative override in section 33 of the Charter itself. This section allows Parliament or a provincial legislature to opt out of specific Charter rights including equality. In other words, if a legislature wants to preserve certain inequalities or to undo the effect of a court decision, it must simply pass a law declaring that its education statute operates "notwithstanding" the Charter. This section will not be used often, but it does give an elected government control over any excesses it perceives in the decisions of judges. Section 33 provides for political restraint on Charter rights.

It must be emphasized that the rights guaranteed in the Charter are not absolute. Courts are invited by section 1 to consider what are the "reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society". It may be hard to justify different levels of services between provinces as they are surely examples of "free and democratic" societies. It may be a reasonable limit for a school board to only supply the kind of special services that they can afford in times of financial restraint. It is possible that the broad remedial powers contained in section 24 may also be subject to the "reasonable limits" clause.

The burden is clearly on the state (in the field of education, this would be the Department of Education, school boards, administrators and teachers) to demonstrate that any limitations on rights are reasonable. This is the mechanism that will be used in order to balance the competing rights of individuals and society. The traditional "hands-off" approach of the courts in matters of education will incline them to listen carefully to governmental objectives. De Zwager and Stewart (1983) comment that if most limitations are found to be valid under section 1, then the Charter will be a weak document. However, if the courts are reluctant to permit restrictions on rights, then the Charter could become a powerful tool in securing many advantages which have been denied to the disabled in the past. The recent Supreme Court of Canada ruling in R. v. Oakes (1986) suggests a sparing application of section 1 and a broad reading of rights. This is encouraging.

The Canadian tradition is not one of judicial activism in school matters but rather one of deference to the educational experts. It is safe to predict that judges will not revolutionize the education system. While the potential for innovative remedies is broad, the reality likely will be more conservative. The judicial role has expanded but there will be no revolution.

What are "reasonable limits" in a "free and democratic" society? This will pose a difficult problem for judges and will require the examination of evidence from experts in the field. The judge in Bales v. Board of School Trustees (1984) did not rely exclusively on statute analysis to resolve the legal issues. Educational experts presented evidence on the desirability of "mainstreaming" students with handicaps and the importance of putting them in the "least restrictive environment". These experts were drawn from both Canada and the United States.

A full canvass of the potential impact of the various Charter sections on the lives of the disabled is presented by de Zwager and Stewart (1983). Only the highlights will be mentioned here and the focus is on education. Sections 3 and 4 provide for the right to vote in federal and provincial elections and to be elected as a Member of Parliament or as a Member of a Legislative Assembly. These sections safeguard our democratic political structure. There are existing laws which say that some people may not vote - for example, the Canada Elections Act disqualifies prisoners from voting in federal elections. There are similar provincial laws which disqualify the mentally handicapped person from voting or offering for election. Everyone is entitled to a right to vote without discrimination based on mental disability. Thus the burden shifts to the state to demonstrate that statutory limits on the right to vote are reasonable. This could extend to involvement in student government in the school context.

Section 6(1) of the mobility rights clause applies only to citizens, so will not help in the challenges to parts of the Immigration Act which restrict the admission of disabled persons into Canada. It can be argued that section 6(2) includes a right to travel as well as take up residence. Therefore, Air Canada, Via Rail and other government agencies cannot formulate policies which prevent disabled persons from travelling. It can even be argued that these agencies have a positive duty to make transportation accessible to the disabled. Section 6(2)(b) does guarantee the right to pursue the gaining of a livelihood in any province. The Supreme Court of Canada in Re Skapinker (1984) concludes that section 6 guarantees mobility between provinces but not within a province, but mobility within a province has been based on "fundamental justice" in section 7 Re Mia (1985). The Supreme Court emphasizes in Re Skapinker that there is no guarantee to a livelihood but only mobility to seek it.

Sections 8 to 14 set out a list of legal rights and these sections need not be limited to criminal law. Section 9 gives everyone a right not to be arbitrarily detained or inprisoned. Section 10 provides that everyone on "arrest or detention", has the right to be given reasons promptly and to obtain a lawyer "without delay" and to be told of that right. Section 14 says that a party or witness in any proceedings, who does not understand or who is deaf, has the right to the assistance of an interpreter. "Proceedings" is a broad term and might also apply to formal hearings in some government-funded institutions, such as public schools, hospitals and universities. It could also be argued that being given such a right means the courts or boards must pay if you cannot afford an interpreter.

The package of legal rights may be particularly important to inmates of mental institutions. While they have not been charged with an offence and are thus excluded from the protections of section 11, they are detained and entitled to "fundamental justice" in accordance with section 7 and to be free of "cruel and unusual treatment or punishment" as guaranteed by section 12. Other provisions such as reasonable search guarantees in section 8 would also apply. These same rights are also applicable to the special education class or residential institution.

Section 23 of the Charter which guarantees rights to minority language education where numbers warrant, and separate school rights in section 29 are the only Charter provisions that expressly refer to education. Since there is a right to have children educated in English or French, it can be argued that this implies a right to education for all. Challenges under these provisions will generally involve significant legal as well as financial and structural implications for education in Canada.

Sections 7 and 15 provide the greatest potential for legal challenges. Does "security of the person" or the concept of "liberty" entitle the child with a disability to an education? In the United States the concept of liberty has been argued in such an expansive way albeit unsuccessfully to date. In the Charter these rights are stated in a positive rather than negative form and this may be significant.

In Weinstein v. Min. of Education for B.C. (1985), the following broad definition of liberty was adopted from the United States Supreme Court.

> Without doubt, it denotes not merely freedom from bodily restraint, but also the right of the individual to contract, to engage in any of the common occupations of life, to acquire useful knowledge, to marry, to establish a home and bring up children, to worship God according to the dictates of his own conscience and generally to enjoy those privileges long recognized at common law as essential to the orderly pursuit of happiness by free men. (emphasis added)

These sections will have the greatest impact on special education and will be explored in detail in later parts of this paper.

Most educational rules and decisions involve some form of discrimination in the broad sense. Compulsory schooling for ages 5 to 16 years is age discrimination by the very existence of these age categories. The courts will be loathe to extend the scope of free public education on the basis of age discrimination. Therefore, publicly funded schooling below and above the compulsory school age range will probably remain at the discretion of school boards and departments of education. Educators may have to justify such age cut offs as reasonable and not just arbitrary and for convenience.

The most compelling case of equality rights could be made for the eighteen and over children who have special education needs. Time is often the "enemy" for children with disabilities. They have the capacity to learn a great deal but often cannot accomplish this potential within the ordinary school years, and therefore the automatic age cut off at 18 or 21 years of age can be very negative, Cruickshank (1986). The effect of a particular cut off age for schooling can have a disparate impact which works to the disadvantage of those in special education classes. It could be argued that the school system must provide enough resources for them to achieve true equality and this may demand an extended school period.

If the United States experience is followed, there may be different categories of protection resulting in strict, intermediate and minimal scrutiny. A strict scrutiny case is one involving a classification based on race or ethnic origin. Such classification will be regarded as inherently suspect by the courts. The law maker or administrator has the burden of showing that there is a compelling, overriding state interest in maintaining the law, in spite of its discriminatory content. At the other end of the scale, a minimal scrutiny test applies to laws which discriminate for social or econmic reasons which are outside of the enumerated list in the Charter.

MacKay (1986 a) argues against importing the American levels of scrutiny into Canada but concludes that the standard of justification expected from the state will vary in accordance with the type of discrimination. Thus it is easier to support a section 1 limitation on age than on sex or race. It has been suggested by Cruickshank (1986) that intermediate judicial scrutiny may be appropriate for the classification of "age" and "mental and physical disability". In Canada, where age and disability are explicitly enumerated, the burden will rest with the government to justify limitations. However, the threshhold for establishing rational governmental objectives and means, and thus reasonable limitations, may not be terribly high.

Section 15 does provide for Charter arguments on a number of combinations of rights. This would include discrimination based on age and disability as discussed earlier in relation to the outer limits of compulsory schooling. Sections 23 and 15 provide an interesting combination. Does a parent have a right to special education in an official minority language? It could be argued that a parent should not have to choose between either section 23 or 15 rights and that provision should be made in minority language education programs for those with disabilities. Indians who suffer from a disability may be subject to two levels of discrimination - race and disability. Indians should have the same access to special education services as their counterparts in the provincial structure. Many other combinations are possible.

Under section 24 of the Charter, courts have a broad power to give a remedy to persons denied a right protected by the Charter. They could order compensation or force a school board to take corrective action. Where the language of the law itself produces inequality, the courts can under section 52 of the Constitution Act, 1982 declare the law to be of "no force and effect". The combined effect of these remedial provisions is to give courts a potentially expansive role in shaping Canadian society. When these broad remedial powers are combined with section 15, the possible results are staggering. The net effect is that judges can give any remedy that is "just and appropriate".

Although the potential is great, in fact the remedies will undoubtedly be conservative. This point can best be highlighted by quoting two passages from Mahe v. The Queen (1985).

> Compliance with the Charter cannot be achieved instantaneously and as long as reasonable progress is being made,

> the court should not interfere ...
>
> Courts must not interfere by decreeing methods or becoming involved in ongoing supervision or administration. (emphasis added)

It is important to appreciate that the courts will not try to achieve precise equality. It will be rough equality and, if American jurisprudence is followed, the legislatures will still be permitted to treat different classes of persons differently, so long as that classification is reasonable.

Remedies such as the United States busing model for constitutional violations have been both complex and controversial and should be avoided. The American Supreme Court has not hesitated to override the policy-making and spending functions of school boards. Cruickshank (1986) rightly predicts that Canadian courts, being more comfortable with exclusively legislative controls over policy and expenditures, will probably be slow to advance such remedies. This is indeed the message from the recent decision in Dolmage v. Muskoka Board of Education (1985). The court held it should not get into the details of enforcement of the "appropriate" placement of a student under the Ontario statutory structure. De Zwager and Stewart (1983), in a more activist vein, predict that if the courts are creative in granting remedies for violations of the rights of disabled persons, it may be possible to attain goals through legal action where political lobbying has failed. The truth of that prediction remains to be tested.

With regard to available remedies it should be noted that the American Supreme Court in Smith v. Robinson (1984) required that administrative remedies be exhausted in all disputes regarding the provisions of special education services to children with handicaps, before coming to the courts. In Canada administrative law was similar in that the sole judicial remedy to enforce the Education Acts was a judicial review application brought subsequent to an internal administrative hearing procedure. Whether a person must exhaust internal remedies before pursuing a Charter claim is not clear. It should also be noted that the courts do not have a monopoly on Charter issues, which can also be raised before administrative bodies. While the remedial potential of the Charter is great the early signs are that both courts and boards will proceed cautiously.

III Constitutional Rights to Education

A. Education in General

Special education is on the front line of education rights and will likely blaze the judicial trail in respect to constitutional rights to education. Courts will be required to determine when distinctions made relating to education are valid and defensible under the Charter. There will be an increasing focus on the courts as vehicles for defining educational rights.

When we are speaking of rights to education it should be pointed out that the right belongs to the child and not the parent although it is often the parent or guardian who makes the claim on behalf of his/her child [MacKay (1984 a)]. American courts have found there is no constitutional right to education but have instead enforced the statutory right, under the Education for All Handicapped Children Act, to free and appropriate education. Support has also been found in the equal protection clause of the American Bill of Rights.

Canadian jurisdictions have been slow to enact positive legislation guranteeing education rights. Only two provincial human rights codes list education as a right (Saskatchewan and Quebec). The greatest strength of this approach may be in its underlying philosophical premise that education is a fundamental human right. There are limits on the human rights protections even in these codes and the guarantees to education in the relevant Education Acts are even more limited [Cruickshank (1982)].

Cruickshank (1986) argues that the right to education must be found in statutes and that Charter decisions can push toward this by highlighting the most obvious inequalities for the disabled. Hopes of many Canadian organizations supporting the rights of the disabled will be dashed unless provincial education acts are reformed to guarantee a right to an "appropriate" education. Canadian courts may apply some pressure but will not embark upon the rewriting of provincial education statutes, according to the Cruickshank view.

The author of this paper disagrees with the Cruickshank analysis and argues that there is a right to education implicit, if not explicit, in a number of the sections in the Charter. There may be a constitutional right to education in Canada in contrast to the situation in the United States. In this respect Canada may be more progressive than her southern neighbour. On the Cruickshank analysis Canada would have the same approach as the United States.

Before dealing with the relevant sections of the Charter it should be pointed out that at the international level Canada has clearly accepted that children have a right to education. Canada is a signatory to the United Nations declarations proclaiming the rights of the handicapped. This includes a commitment to the International Covenant on Economic, Social and Cultural Rights which supersedes the Universal Declaration of Human Rights and the Declaration of the Rights of the Child. Each of these asserts that a child has a right to an appropriate education tailored to his or her individual needs.

While Canada is bound by international law to observe these declarations, they have no automatic legal impact in Canada. They certainly can be used as guidelines to interpreting the relevant provincial legislation and to invoke the power of moral suasion. When state law is ambiguous it should be interpreted so as to fit with international obligations.

One of the unique features of the Charter, which sets it apart from its American counterpart, is that it does make express reference to education in two different sections. The reference to denominational schools in section 29 is a reflection of Canadian history. Religion and education have been closely linked in Canada unlike the separation of church and state in the United States [MacKay (1984 a)]. The other section is 23 which is a reflection of Canada's bilingual and bi-cultural identity, which is another distinguishing feature from the United States scene.

Section 23 states that a citizen, who is a member of either the English or French speaking minority in a particular province, has the right to have their child educated in the minority language. This right is qualified by the expression "where numbers warrant". If there is a guarantee to be educated in either of Canada's official languages this surely implies that there is a right to be educated in a particular language without also guaranteeing education would be offering a vehicle but denying roads and destinations. Furthermore, the "where numbers warrant" limitation applies to delivery in the minority language and not the implicit guarantee of education.

Under section 7 of the Charter everyone has the right to life, liberty and security of the person. A compelling argument can be made that in today's society there is no "liberty or security of the person" without a proper education. If life is read broadly enough to embrace a quality of life, a denial of access to education could be a violation of this right, as well. The liberty interest has not been so interpreted in the United States but the different and positive wording of the Canadian Charter may produce a different result north of the forty-ninth parallel. The exact wording of section 7 reads as follows:

> Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice.

It is possible that this section contains a single inter-connected right and that there is no separate guarantee of "life, liberty and security of the person" [Re B.C. Motor Vehicle Act (1985)]. Such a conclusion is softened by the Supreme Court of Canada's related conclusion that "fundamental justice" has both a procedural and a substantive component [Re B.C. Motor Vehicle Act (1985)]. This would allow for broader judicial review of decisions related to education.

As early as 1954, the United States Supreme Court recognized the vital nature of education in a democratic society in the famous case of Brown v. Board of Education (1954). It is even more compelling in the 1980's then it was thirty years ago [MacKay 1984 b]. Without an equal opportunity to education the "free and democratic society", which is the touchstone of section 1 of the Charter, and the democratic rights guaranteed in sections 3-5 are meaningless. Democracy presupposes an educated electorate.

Rights to education may be prerequisites to the exercise of free speech guaranteed by section 2(b) of the Charter. The American courts have given conflicting judgments on holding education as a basis for the exercise of the right to free speech. In San Antonio v. Rodriquez (1973) differing financial support from one state to another for education was upheld as constitutionally valid. Education was rejected as a fundamental right, even as a prerequisite to free speech. Almost a decade later, the United States Supreme Court in Board of Education, Island Trees v. Pico (1982) held that an informed and educated citizenry is a precondition to meaningful free speech. The latter decision has been controversial and there were many different opinions. One conclusion of Pico was that there is a right of access to ideas. This is a good foundation for a right to education. Section 7, supported by related sections, does provide a constitutional base for the right to education.

B. Special Education Rights: Section 15

Section 15 is written very broadly in terms of equality and has two important aspects, first section 15(1), the positive guarantee of equality and second, section 15(2), a provision which allows affirmative action programs. The specified types of discrimination in section 15(1) are only examples of the kind of discrimination that could produce inequality. Undoubtedly, early cases will focus on the enumerated forms of discrimination. The express reference to physical and mental disability invites an argument for special education classes, provided on a basis of equality. Indeed, even an affirmative action program pursuant to section 15(2) could be required to give true equality to those who suffer from physical or mental disabilities.

The importance of equality rights is that they do not depend on a prior finding of a legal right to education or schooling. Section 15 simply declares "equal protection and equal benefit" of the law whatever that law may be. Therefore, if an education statute or regulation provides any protection or benefit, whether described as a "right" or not, it must be dispensed on the basis of equality between the disabled and the non-disabled. However, the conferral of the benefit or protection must be found outside section 15. As indicated above, section 7 of the Charter is one likely source. Statutes and regulations provide other sources.

It can be argued that the interpretation of "equal benefit" is to include equal educational opportunity. Since the Quebec and Saskatchewan Human Rights Codes and some provincial education statutes guarantee education, equality may demand the same of other provinces. Section 15 undoubtedly will spawn arguments that all persons in all parts of the province should have access to proper and well-funded special education programs. Section 15, like all Charter provisions, is subject to reasonable limits under section 1. School boards will argue that it is reasonable for rural school boards to provide less in the way of special education services because they have a smaller budget. Even such economic arguments can be countered. If special education needs of children are not met in the schools, they will likely cost society more in the future. The section 1 reasonable limits argument will be explored in more detail later.

Before turning to the Canadian situation it is useful to briefly consider the extensive American experience concerning the legal rights to education for the disabled. Many books have been written on the American situation, one of the most recent is by H.R. Turnbull III (1986). Free Appropriate Public Education: The Law and Children with Disabilities. The main message of this and other books is that the advancement of educational rights for the disabled has more to do with statutes than the Bill of Rights.

The United States has no enumerated list like Canada's section 15 of the Charter. However, the mentally disadvantaged have been recognized as a "discrete and insular minority, deserving of constitutional protection", in Cleburne Living Center v. City of Cleburne (1984). This same use of the equal protection clause could apply to the physically disabled as well. The facts of Cleburne involved a zoning exclusion of group homes for the mentally disabled but the same logic could be applied to education.

A major piece of legislation in the United States has had a considerable impact on the provision of special education services. Congress has established in the Education for All Handicapped Children Act (1975), a statutory right to free and appropriate education. Failure to provide such education could result in the offending state being denied federal funds. The federal power of the purse is important.

This legislation has resulted not only in increased demand for diagnostic services, but also resulted in government guidelines pertaining to student placement decisions. In Canada, there is no standard legislation for the provision of special education. It varies from the least definitive in Prince Edward Island to that of Ontario which emulates the United States Act [Kimmins, Hunter and MacKay (1985)]. It is highly unlikely that we will follow the United States, however, in imposing "strings-attached" funding for special education. This would be an invasion of the provincial control over education. The lack of a federal presence in Canadian education makes the situation quite different from the United States. It means that the imposition of minimum uniform standards will be by way of the Charter. Thus the Canadian battleground will be a constitutional one while the American one has been largely statutory.

The framework for the constitutional battles will be the guarantees of equality in section 15. The simple reality is that there is not going to be any one theory of equality either among judges or among Canadians generally [MacKay (1986 a)].

Section 15 is clearly a non-discrimination guarantee, both in its general prohibition and in its particular prohibitions on specified grounds. In addition to non-discrimination, Lepofsky (1984) adds that there is broad support for the view that section 15 also guarantees equality of opportunity to all Canadians. This view of equality could involve the courts in a positive as well as negative role in upholding the Charter. Judges could be required to mandate special education programs in order to produce real equality of opportunity. Section 15(2) of the Charter at least invites affirmative action programs, to ameliorate the conditions of the disadvantaged, and declares such programs as in accordance with equality. A positive approach to section 15(1) could result in courts mandating affirmative action.

In discussing the focus of potential Charter litigation Cruickshank (1986) stresses it cannot be a demand for the right to education, measured in equal test results and equal diplomas. It can only be a demand for equal opportunity to receive an education suited to the child's individual needs. He adds that even defined in this way, there is only so far that the courts will go in order to establish opportunities and meet needs. However, there is an even bolder claim that section 15 mandates equal results.

The broadest, and desirable interpretation of equality, is the one which calls for equal outcomes. This theory will focus attention on the actual impact and results of legal and governmental policies. Judges here would be involved in mandating positive programs to promote equal outcomes. However, judges are likely to be slow to adopt such an extravagant definition of equality.

So the definition of equality will continue to be a difficult and challenging task for judges and educators in the days ahead. Furthermore, acceptable definitions of equality will change over time. How we define equality will be crucial to the practical impact of section 15 [MacKay (1986 a)].

C. The Content of Constitutional Rights to Education

Declaring a right to education is the easy task, the difficult one is giving content to that right. Even when some content has been given to the right, another difficulty emerges in assessing whether the right or rights are distributed on a basis of equality. Turning to this latter point it is obvious that equality is not violated merely because different groups are treated differently. Indeed, failing to make special arrangements for the disabled would be a clearer violation of equality. Many forms of discrimination are reasonable and even desirable. The problem is that discriminations are made on the basis of stereotypes as well as empirical evidence about needs. One example is the mistaken assumption that mentally disabled children can not benefit from physical education. The key to the equal distribution of benefits is not identity of treatment but the avoidance of stereotypes.

Turning to the problem of defining the content of a right or rights to education, there are no simple solutions. Neither rights nor education have been adequately defined so the task of defining rights to education is doubly complex. In this paper the content of rights to education will be explored in relation to three headings:

1. Access to Special Education
2. An Appropriate Content
3. Related and Auxiliary Services

While these headings do not solve the problem of definition, they do provide a framework for analysis.

1. Access to Special Education

There are preliminary problems with defining who is disabled and entitled to special education programs. In Ontario, under Bill 82, the definition of who is entitled to special education programs wisely was left to the more flexible regulations. Those entitled range from the gifted child to traditional categories such as physically handicapped, emotionally disturbed and learning disabled. Would a child with Acquired Immune Deficiency Syndrome (A.I.D.S.) be included as "disabled" and thereby entitled to equal educational opportunity? In the United States there has been a debate on this with some school boards regarding A.I.D.S. as a physical disability. A recent volume of The Special Educator explored the question of whether A.I.D.S. was a special education problem.

There are conflicting views by the American and Canadian courts on the issue of whether the content of rights to education includes access to special education. Canadian courts in Bales (1984) and Carriere (1978) have ruled that local school boards should provide access to an education. In Pierce (1976) a United States court held that there was neither a statutory nor a constitutional duty to place a child in a special class. Allowing access to an existing class and mandating the creation of one are different matters. Courts in both Canada and the United States have been reluctant to mandate the spending of government funds [San Antonio v. Rodriguez (1973)].

Problems of access and appropriate content are closely linked especially when the entitlement to a special education program is contingent on deriving educational benefit. It is the requirement that students must benefit from the special education program in Nova Scotia which allows the exclusion of students in accordance with regulations under Nova Scotia's Education Act. Whether such exclusions are constitutional has yet to be tested but the validity of the regulation has been questioned in the academic literature [MacKay (1984 c) (1985 a) (1985 b)].

D. Harmer (1985), Director of the Atlantic Provinces Resource Centre for the Visually Impaired looks at various theories of equality and human rights. He quotes one theory by Williams as presented in Weinberg (1981), which states that human rights should only be extended to persons who "have the capacity to feel pain, affection or desire self-respect". However, other theories suggest that all human beings must be treated equally. Cruickshank (1986) suggests that under no circumstances may less educational funds be spent on a very low functioning child than on a "normal child". Harmer replaced the word normal by "visually impaired". These comments apply to questions of appropriate content as well as access. What are at stake are basic questions about what it is to be human and the limits of education.

This discussion of who is educable begs a definition of education. Education is learning resulting from teaching: teaching producing no learning is not education, and still less is mere attendance at school. Harmer (1985) includes an element of training as falling within the definition of education. If a child is not benefitting is it a problem with the program or the child? Surely the program should be designed to suit the child rather than the reverse [MacKay (1985 a)].

Will the Charter and section 15 in particular be used to give all children regardless of disability access to an education? Carriere v. Lamont Board of Education (1978) does indicate a general right of access but the Alberta Supreme Court refused to mandate the provision of a special program. In Bouchard v. Comm. d' Ecoles de St. Mathieu-de-Dixville (1950) the Supreme Court of Canada limited the obligation of school boards to providing education for mentally disabled students who could benefit from such instruction. This conclusion cannot be dismissed as a relic of the past because the same approach was followed in Doré v. La Comm. Scolaire de Drummondville (1983), a decision of the Quebec Court of Appeal. Thus even the Quebec human rights legislation did not prevent an autistic child from being excluded from the school system because her behaviour was too bizarre for the school system [O'Reilly (1984)].

All of the above cases preceded the coming into effect of section 15 of the Charter on April 17, 1985. As stated one of the prohibited grounds of discrimination under this section is on the basis of mental or physical disability. Thus a denial of access to education on the basis of disability would on the first analysis appear to be a violation. The burden then shifts to the school authorities to justify their exclusionary law or policy as a reasonable limit under section 1 of the Charter [Hunter v. Southam (1984)]. Thus educational authorities must demonstrably justify that the child would not benefit from education or possibly that the cost of providing it in both social and economic terms would be prohibitive. Their task will be much easier if some other state agent is willing to accept responsibility for the rejected child. The effect of section 15 of the Charter should be to entrench the concept of "zero-reject", with a heavy burden on state authorities to demonstrate why a child should be excluded. On questions of access the Charter will have a significant impact.

Turning to the situation under the Canadian Charter, some early commentators have argued that there may be an affirmative duty in the state to provide "life, liberty and security of the person" [MacKay and Holgate (1983) and Boyle (1984)]. It can be forceably argued that there will be no real liberty and security of the person for the handicapped unless they are given full access to education. In many cases this will require positive governmental actions; such as, creating special classes, hiring well trained teachers, and making school buildings accessible. Physical and mental disabilities do result in some human limitations, but it is the circumstances in which these people find themselves wich determine whether these disabilities will become serious handicaps.

There are also basic questions about what constitutes a physical or mental disability, within the meaning of section 15 of the Charter. Is a gifted child mentally disabled? Probably not, but he or she may be handicapped within an education system geared to the "normal" child. Does a person with A.I.D.S. have a physical disability, justifying a special education program? The answers to such questions have direct implications for both questions of access and content. Thus both the coverage and scope of sections 7 and 15 of the Charter remain to be decided by the courts. This makes clear prediction difficult.

2. An Appropriate Content

Neither American nor Canadian courts have been anxious to define the appropriate content of an educational program. Mandating equal access is one thing; designing an appropriate educational content is quite another. While courts in the United States have been more adventurous than those in Canada even the former are reluctant to second-guess the educational experts. The following quotation from the United States Supreme Court in Wood v. Strickland (1975) is representative.

> We think there must be a degree of immunity if the work of the school is to go forward; and however worded, the immunity must be such that public school officials understand that action, taken in the good-faith fulfillment of their responsibilities and within the bounds of reason under all the circumstances, will not be punished and that they need not exercise their discretion with undue timidity.

In Canada where there is even a stronger tradition of deferring to the elected branch of government courts have embraced a "hands-off" approach to education programs. Even after the arrival of the Charter this sentiment has prevailed as evidenced in the following passage from Dolmage v. The Muskoka Board of Education (1985).

> The priorities of the Board in the process of phasing in special education programmes was a matter for the Minister, not the Court. Control over the suitability of each Board's plan lies with the Minister - his approval of the Muskoka Board's plan was required and was obtained, as it was for the several annual revisions of the plan. The ministerial approval is the means by which the Minister can be assured that government policies are followed. Since the Muskoka plan was satisfactory to the Minister, it is not for the Court to meddle with the details of implementation of

> government policies nor with the rate of progress of their implementation. Those are administrative, financial and policy matters primarily. Equally I do not think it is for the Court to attempt to take over the control of such matters even though our American brothers have done so in some instances. I am not at all tempted by their example. It is my firm view that matters of that kind are for elected officials and not for judges and I readily confess to possessing no aptitude for such a role.

While this is only the view of one particular court it is likely to be widely shared. A similar sentiment was expressed in the earlier Bales case (1984). The first significant case to raise section 7 in the special education context is Bales v. Board of School Trustees (Okanagan) (1984). The court held the Board was acting reasonably in offering special classes in a residential setting. The segregation, though against the parents' wishes, was imposed to further the provision of an adequate education and as such was a reasonable education decision. While it was not an ideal placement it was a reasonable one. The school board view prevailed. If this case had arisen after section 15 of the Charter came into effect, the burden to demonstrate reasonableness might have been placed on the education authorities [MacKay (1984 d)]. As it stood the parents were required to show that the placement recommended by the school board was an unreasonable one. It is not clear that this shifting of the burden would change the result.

The Bales case rejected judicially enforced mainstreaming. Although the court was convinced of its general desirability, it did not wish to interfere with the judgment of the educators. While Bales pre-dates section 15 of the Charter, the court likely would not have mandated mainstreaming even in the face of section 15 prohibitions against discrimination based on disability. Courts are likely to be receptive to reasonable limits arguments cast in terms of the rights of the other students in the mainstream class. At least the educators would have to show that the alternative to mainstreaming was a reasonable one to meet the section 1 test of the Charter. Before considering the other early Charter cases, the American experience will be considered in capsule form.

In order to comply with the federal Public Law 94-142 (already referred to as the Education for All Handicapped Children Act of 1975) states must ensure that school districts offer each emotionally handicapped child a "free appropriate public education in the least restrictive environment". In Timothy W. v. Rochester School District (1985) an "appropriate" special education program was defined as one which confers some educational benefits, but not necessarily one which enables the child to reach his or her full potential. In reaching this conclusion the New Hampshire court was echoing the words of the United States Supreme Court in Board of Education of Hudson School District v. Rowley (1982). The Timothy W. case concerned the education of a severely disabled child and his educability and thus raises issues about related services as well as the basic instruction program.

An appropriate education means more than merely having the right to take up a space in the classroom. Some American courts under P.L. 94-142 have gone so far as to order school authorities to develop an educational program suitable to the needs of an individual handicapped child. However, there have been other American decisions, such as Harrell v. Wilson City Schools (1982) where the court held that a child was not entitled to an ideal or even most appropriate placement. The parents claim for a grant to cover the cost of sending their thirteen year-old hearing impaired child to a leading school was denied.

It is unlikely that the content of an appropriate program will be judicially determined in Canada. This view is supported by the early cases. In Yarmology v. Banff School Dist. No. 102 (1985) the Alberta Supreme Court did not order a particular placement because of the discretion allowed to the school board under section 145 of the School Act regarding a change of placement. The decision was declared a nullity on the grounds that the School Board had failed to act in accordance with fair procedures. Then in Dolomage (1985) the Ontario Supreme Court deferred to the Muskoka School Board on the "reasonable content" of an appropriate program during the phase in period under Bill 82. The Alberta Supreme Court ruled in Carriere (1978) that the child has a "right to schooling" but refused to require a program of special education or individual help for the student in the regular classroom. There are no signs of a judicial definition of appropriate content.

Many school boards still provide a special curriculum where controversial topics such as sex education are avoided altogether. The burden would be on the school authorities to justify such special treatment under Section 1 of the Charter. Lepofsky (1984) argues that justification for such unequal treatment of the disabled are often based upon inaccurate stereotypes and underestimates of what disabled people can do. In his view, all the listed grounds, including age and disability should produce the same level of judicial scrutiny. While Lepofsky's view is logical, judges will be more likely to uphold laws that discriminate on the basis of age and disability than on sex or race [MacKay (1986 a)].

Courts and educators have given consideration to the learning environment that should be provided to the disabled. Mention has already been made of the American court decision in Harrell v. Wilson City Schools (1982) where the child with a hearing disability was entitled not to ideal or even most apprpriate placement, but only to the "least restrictive environment". The Supreme Court of Canada in A.G. Que. v. Quebec Protestant School Board (1983) held that rights should only be limited as little as will achieve the "necessary and desirable government objective". This restrictive approach to section 1 limitations on rights has been re-affirmed in the Supreme Court of Canada decision in R. v. Oakes (1986). De Zwager and Stewart (1983) in writing about the "least restrictive alternative" describe it as providing an environment for the child that is as close to the normal classroom as possible. This they hold would mean the removal of architectural barriers and the provision of auxiliary aids. The least restrictive alternative may not only fit educational theory but also a Charter which operates on the premise that rights should only be limited to the extent that is necessary to achieve "substantial and pressing" government objectives.

Although there was some discussion of the least restrictive educational setting in Bales (1984) the courts were unwilling to insist on it. While such a constitutional standard for measuring the appropriateness of a program has logical appeal, the courts have still been reluctant to define educational content. The educators remain the primary decision-makers in this area.

3. Related and Auxiliary Services

There is a growing acceptance on the part of the educational community that students with special health needs can and should be managed in the most normal setting possible. Among the special medical procedures which may be required by students are the following: administration of drugs, postural drainage, catherization of bladder and tube feeding. Because of the legal, ethical, moral and professional implications of the issues surrounding the provision of such care and treatment, school boards are finding it increasingly necessary to develop standards and procedures related to these special health services for students with disabilities. The Metro Toronto Public School Board includes the following in their recently approved Policy and Procedures (1983): a written management plan, written parental and medical approval, preparation, training and clarification of roles and responsibilities, collaboration with the Department of Public Health, legal and insurance agents.

At present the policies of Teachers' Unions, such as the Nova Scotia Teachers' Union, seem to not be opposed to teachers providing paramedical services to "exceptional" students. Such groups are usually advised by their legal counsel to avoid medically complex procedures. They also advise against providing paramedical services, except in emergency situations and even then only with caution. The rationale is that treatment which results in harm to the student could render the teacher liable. It is also contrary to the Nova Scotia Pharmacy Act and Medical Professions Act to administer drugs as part of your job, without having the education and training to do so.

Having parents sign consent and waiver forms may offer limited protection. The parents have no power to release a teacher or school board from liability to the child but having such forms signed might be effective to waive any claim the parent might have in his or her own right for damages suffered by a child. At a minimum such forms involve and inform the parents and are good evidence of a reasonable standard of care [MacKay (1984 a)].

Underlying all this is the question of what organ(s) of the state is (are) responsible for these special needs of children. Is it the Department of Health or Department of Social Services who is responsible? The United States Courts in Irving Independent School District v. Tatro (1984) held that some medical needs should be serviced by some other state agent outside the education system. In Canada, there is an analogous problem concerning the responsibility for the 7-12 year olds who are "acting out" but who are not subject to the Young Offenders Act.

While no one wants unqualified educators to be involved in medical procedures, a simple withdrawal of these services could result in denying many students an access to education. The ideal solution is to have trained nurses or other medical professionals provide the necessary services, but that is not always possible, in times of shrinking educational budgets. Requiring the parents of the relevant children to provide these services would effectively discriminate against working parents and those at the lower income levels. Some state agent has an obligation to provide for the basic medical needs of students with disabilities. A failure to do so would have to be justified as a reasonable limitation on equality as guaranteed in section 15 of the Charter.

In looking at the role of related or auxiliary services with regards to the content of rights to education consider the role of the school psychologists. Perhaps the most visible input that they have is the administration and interpretation of individual tests of ability and achievement with respect to special education placement. However, studies are being done which cast the reliability of many of these tests in doubt. Also American courts have ruled in Larry P. v. Riles (1972) that intelligence tests were not appropriate tools for determining whether black students should be placed in classes for the educable mentally handicapped and in Diana v. State Board of Education (1974) that unilingual testing was a violation of equality and concluded that children must be tested in the language of the home.

The school psychologists are often the critical person in student classification. Kimmins (1985) comments that legal recognition of the role and responsibilities of school psychologists in Canadian education acts varies across the country but that the overall picture is one of neglect. There are many ethical and legal issues - such as to whom do they owe a professional duty, the parents, the school board or the student? The matters of handling and releasing information are usually dealt with by school board policy. On the issue of confidentiality the school psychologist is bound by the Professional Code of Ethics and Standards of Canadian Psychological Association but these professional standards may sometimes conflict with the law [Kimmins (1985)]. The services of occupational therapists, speech pathologists and interpreters for the deaf also raise questions of equality and access. There is often a regional bias in the delivery of these auxiliary services.

Having physically accessible programs is imperative for the student with disabilities. Using section 15 of the Charter it could be argued that you are being denied the equal benefit of the laws which create and fund the public transportation system. The argument would be that a government must spend money so as to make the social services available to everyone without discrimination. To put this in the context of the earlier discussions the Courts are unlikely to order precise equality and instead will be working toward providing equality of opportunity but probably not equality of outcome. This is unfortunate and may change as courts become more comfortable with their new Charter role.

In this vein, affirmative action programs should be mentioned. These programs give preferential treatment to a group which has suffered discrimination in the past. It is usually a temporary measure designed to attain a special objective. Section 15(2) does not use "affirmative action programs" but instead "any law, program or activity" which is a much broader phrase. Lepofsky (1984) argues strongly that segregated facilities producing better but still unequal opportunity, does not improve the condition of the group. The group is still treated unequally and is therefore still disadvantaged.

The need to integrate the disabled into the main stream of life is widely recognized but little practiced. Mainstreaming of special education children is still widely resisted by many school boards and some parents of regular stream students. The courts are unlikely to mandate mainstreaming in the early cases. Since auxiliary services are often provided in one location the result can be a ghettoization of the disabled in one particular school. This segregation will have to be justified as a reasonable limit on the equal rights of the disabled to attend the local school. Arguments based on cost will play an important role.

IV Classification of Students and Fair Procedures

It appears from the American experience [Pierce v. Board of Education of Chicago (1976)] and the early Charter cases that section 7 will grant procedural rights but not significantly impede school authorities in deciding what education is appropriate [MacKay (1985 a)]. Section 7 will reinforce the judicial trend requiring fair safeguards. The basic components of fair procedure are a chance to state one's case before an unbiased decision-maker. This administrative law doctrine will be expanded under the Charter.

Procedural protections such as notice and right to a hearing are judicially provided, if not already required by the education statutes (Bill 82 is an example), by the regulations accompanying the appropriate acts or the policy-manuals of individual school boards. Section 7 of the Charter guarantees the "principles of fundamental justice" and is regarded as the closest equivalent to the American "due process" clause.

One of the most intriguing questions emerging from the early case law on the Charter is whether principles of "fundamental justice" will be procedural or substantive. In Re B.C. Motor Vehicle Act (1985) the Supreme Court of Canada held that section 7 does have substantive as well as procedural content and thus can be used to challenge the content of government policy as well as the procedures used to implement it. Substantive review under section 7 would have considerable impact on educational policy. However, to date the education cases Bales (1984), Yarmoloy (1985) and Dolmage (1985), have all taken a procedural approach to section 7 of the Charter. These courts have not challenged the substantive government decision but have insisted that fair procedures be followed before making a special education placement or reassignment.

The classification of students and the subsequent labelling are of vital concern because it can so seriously affect their futures. Hoffman v. Board of Education of New York (1978) is a tragic illustration of the importance of putting the proper label on students. A child with normal intelligence was placed in a class for the mentally retarded when test results indicated he scored one point below placement in a regular class. He stayed in the special class for 11 years before he was retested for purposes of a government grant and the misclassification discovered. Damages were awarded, especially for the trauma of readjustment, but these were denied on appeal.

Since this time it has been recognized both in the United States and in Canada that parents must be provided with "due process" hearings at the initial classification stage. Most notably are the procedural protections provided for in Ontario's Bill 82. Where other Acts are silent (as is the case in Nova Scotia) about placement and removal of students in special education classes, the boards have usually developed policies to deal with such matters. At a recent Dartmouth, Nova Scotia School Board meeting concerning the policy for the education of children with special needs, it was stressed that "it should go in writing as part of the official policy that parents are involved from the first". Thus the imposition of fair procedures under section 7 of the Charter will not seriously disrupt most educators, who are already providing fair procedures in advance of placements and classifications.

Parents need information about the operation of the school and the progress of their children to have any sense of control over education. However, access to information at times may be difficult and to require a balancing of interests. What if a student confides in a guidance counsellor on the condition that his/her parents not be told? Can a school withhold information from parents because it feels revealing information would result in the child receiving a beating? The answers often depend on the precise facts of a particular situation.

There are three components to mention in regard to the access, privacy and confidentiality of student records and reports. These are (1) confidential documents such as student records should be kept private; (2) students (and parents) should have access to his/her own file; (3) students (and parents) have the right to have errors on the record corrected [MacKay (1984 a) and (1984 e)]. It would appear that both common law and statutory protections are found wanting. Provincial Freedom of Information Acts and some education acts have provisions about student records that are helpful. However protections are mostly in the form of school board policies.

In a review of Canadian legislation MacKay (1986 b) concludes that only Ontario, Saskatchewan and the Yukon directly address the question of access to student records. Such access is of particular importance for special education students because the kind of information on file is more likely to be damaging. The flip side of this coin is the confidentiality of these records and the protection of student privacy. Here again the issue is usually resolved by individual board policies and thus varies greatly. Access is usually given to parents but not students, which may result in challenges based on age discrimination under section 15 of the Charter.

In the United States access to and privacy of student records is much better protected than in Canada [Turnbull (1986)]. Indeed, the United States has many more due process protections built into the special education process. Some commentators, in both Canada and the United States, argue that the Americans are in danger of over-judicialization and of being engulfed in due process. Similar fears are sometimes expressed about Ontario's Bill 82. Canadian courts have been more cautious about imposing procedural protections than their American counterparts, but the trend has been towards increased activism in this area. The Charter will accentuate this trend.

V Teacher Liability for the Special Education Student: Discipline and Educational Malpractice

While the Charter is cast largely in terms of rights, there are corresponding responsibilities to see that these rights are respected. Thus all education officials from the Minister of Education to the front line teacher should be aware of the Charter and its implications for the treatment of students in special education. To properly address this issue would require a separate article on student rights [MacKay (1984 e)] but for present purposes only questions of discipline and educational malpractice will be considered.

A. Discipline and the Treatment of Students with Disabilities

Traditional ways of disciplining students may now be limited by two Charter provisions. The most obvious one in section 12 which states:

> Everyone has the right not to be subjected to any cruel and unusual treatment or punishment.

As stated elsewhere [MacKay (1986 b) and (1984 a)] section 12 will likely be applied to schools and not restricted to prisons as in the United States. It is also important to note that the section refers to treatment as well as punishment and the former is a broader concept. A particular behaviour modification program could be regarded as treatment, even though not punishment. Thus special education students, like all others, must not be subjected to cruelty.

Disciplinary action may also be challenged as violating "fundamental justice" in section 7 of the Charter. This would be a substantive interpretation of section 7 but this is open to the courts after Re B.C. Motor Vehicle Act (1985). It is possible that a wider range of actions would violate "fundamental justice" in section 7 than would be considered cruel under section 12 of the Charter.

There are also questions of equality involved in the discipline of students with disabilities. The particular nature of the disability may require different modes of discipline. Equality within the meaning of section 15 of the Charter does not always mean identical treatment. In some special education classes the only way to restrain a child is to physically hold him or her. This would not be acceptable in a regular class but may be appropriate in a special education class, depending on the facts [MacKay (1984 a)]. Such an approach should not be taken too far and educators should remember that different treatment will have to be justified as a reasonble limit on equality in accordance with section 1 of the Charter. The starting premise is that discipline should be administered without discrimination based on disability.

Interesting questions exist as to the proper scope of the section 43 Criminal Code defence to what would otherwise be an assault. Is a person's status as a child set by chronological or mental age? The Supreme Court of Canada in R. v. Ogg-Moss (1985), opted for chronological age. This case also defined "teacher" fairly narrowly and did not extend the protection of section 43 to a residential counsellor. Such conclusions raise concerns for those who operate residential institutions for the mentally or physically disabled [Harmer (1985 b)].

The Supreme Court of Canada in R. v. Ogg-Moss (1985), in concluding that section 43 of the Criminal Code only applies in teaching settings, sets out other conditions that must be satisfied: (1) the offence committed by the child must merit punishment and (2) the punishment inflicted must be reasonable and appropriate tothe offence. The use of physical punishment is only appropriate when the child can appreciate the correction. The use of physical force when dealing with students who suffer from multiple disabilities would therefore not be appropriate. Discipline should be maintained in other ways if at all possible.

Corporal punishment, in all but British Columbia, is still legally available as a means for enforcing school rules, subject to the policies of individual boards or schools. The administration of corporal punishment has not attracted due process protections in the United States [Ingram v. Wright (1977)]. Canadian courts will have to decide whether section 7 will apply to the infliction of corporal punishment. The courts should apply section 7, since the principles of "fundamental justice" do apply to the suspension of a student.

Even with section 12 of the Charter, sedation of students for control or the use of physical restraint for students who are disturbed and acting out will probably be interpreted by the courts as within the "reasonable limits" clause in section 1 of the Charter. Canadian courts will be reluctant to get involved in determining "appropriate" discipline in the schools. However, they will set the outer limits and invalidate discipline which is cruel or contrary to fundamental justice. Courts will also insist that discipline be administered on a basis of equality.

B. Suspensions and Searches of Special Education Students

Questions of equal treatment for disabled students also arise in the context of suspension and school searches. MacKay (1986 b), (1984 a) and (1984 e) discusses the general Charter impact on suspensions and searches as means of enforcing school rules. The point to be emphasized here is that any usual or different treatment of students with mental or physical disabilities, can be challenged as a violation of equality in section 15 of the Charter. Different treatment does not necessarily violate the Charter, because the comparative groups may not be similarly situated [Lepofsky (1984)]. Even if the groups are comparable, the educators may be able to use section 1 of the Charter to demonstrate that different treatment is reasonable and justified. The burden, however, will be on the educators.

It is fairly common for students with disabilities to act out in class and engage in conduct which would lead to suspension of a regular stream student. This was the situation which arose in Bouchard v. Commissionaires d'Ecoles (1950) and Doré v. Commission Scolaire (1983). These situations may provide examples of where equality will demand different, rather than identical, treatment. Special allowances may have to be made for the disability of the students affected. Transgressions which would result in the suspension of a non-disabled student, may not justify the suspension of a disabled one.

Search powers raise a different version of equality. There are few obvious reasons why a disabled student should be subjected to different standards of search from the non-disabled student. In this instance identity of treatment may offer the best road to equality. The promotion of equality under section 15 of the Charter requires a consideration of the facts of the particular situation and the pragmatic results of identical or discriminatory treatment.

Principals often conduct searches as part of their obligations to maintain order and discipline in the school. Under section 8 of the Charter everyone is to be free from "unreasonable" searches. What constitutes a reasonable search? A principal or teacher must believe that evidence will be found and be acting on a reasonable belief that a student has committed a crime or is carrying a prohibited object or substance or is in violation of some school rule. American courts have found a wide range of school searches to be reasonable [MacKay (1984 a)].

The controversial issue of strip searches arose recently when twenty-four Grade 10 boys between the ages of fourteen and sixteen were subjected to a strip search of the whole class in an Edmonton high school. Since the search was for a stolen watch it was indeed an outrageous incident and heartening to see that at least the issues of potential Charter violations were raised in the media and that some parents explored the possibility of legal action. Because the boys concerned were disabled there are also questions of equality.

C. Malpractice Suits and Teacher Accountability

Suing teachers for malpractice is largely a matter of common law liability in tort but the Charter may have an indirect impact. To the extent that education is defined as a right under the Constitution, the responsibility of the state to deliver this right in a non-negligent fashion is increased. This accountability also extends to an assessment of whether educational services are provided on a basis of equality. The quality of services provided to disabled students must be as high as that provided to the non-disabled. Increased statutory recognition of special education has also raised concerns about accountability.

The passage of Ontario's Bill 82 has sparked increased concern about teacher liability. In Canada, educational institutions and staff have never enjoyed an immunity from tort liability similar to that afforded their American counterparts. A review of reported educational litigation indicates, however, an apparent immunity from liability for non-physical harm caused by institutional or teacher incompetence, which results in either the student's failure to attain the level of learning or a student being misclassified as to ability or achievement [Foster (1985)].

The policy reasons for the American courts affording educators such protections are not compelling. As Foster (1985) and others have written, there should be a recognition of a legal duty of care owed by educators to their students. Courts should establish both an appropriate standard of care by which to judge the propriety of an educator's conduct and an acceptance of intellectual harm as a tortious injury. Concern of the courts in educational malpractice actions would not be to ensure that all students succeed, let alone achieve, the same level of learning. This could never be achieved given all the variables involved. Rather, it would be to ensure that all students receive the benefit of an education from teachers and educational institutions who meet a minimum acceptable level of competency.

Although the American cases, including Hoffman (1978) suggests immunity is available in the United States it appears that in Canada there could be a liability for broken minds as well as bones. It will be hard to show cause but the Canadian courts may, in the appropriate circumstances, be prepared to hold educators accountable for the quality of the services they provide. O'Reilly (1985) is less optimistic about the chances of Canadian malpractice suits. He cites the inexact nature of education, the general deference of courts to school administrators and the concern about the economic impact on school boards as likely reasons for rejecting malpractice suits. Some of these factors are changing and in particular more steps have been taken towards internal accountability for teachers.

The American state laws and Ontario's Bill 82 have established elaborate administrative procedures for assessing which students qualify as "handicapped" or "disabled" and for identifying the "appropriate" special education program which the district will fund. Once it is concluded that the student is "exceptional" a pupil evaluation team must meet with the child's parents to develop an "individualized education program" (I.E.P.). It is a written statement for each exceptional child and includes a statement of special educational services to be provided. Educators also must develop an annual statement of placement identifying the school, the program and the services being provided. If parents disagree with any decisions they have an opportunity to appeal to an impartial administrative tribunal.

These I.E.P. are valuable in that they ensure proper planning is being done and that the parent is involved throughout the process of special education services being provided to his/her child. Failure to do or to deliver on an I.E.P. might present grounds for liability on the basis of teacher or institutional incompetence. Whether the Charter's focus on courts will extend to malpractice suits remains to be seen.

VI Reasonable Limits and Cost

All the Charter rights (with the possible exception of gender equality in section 28) are subject to the section 1 reasonable limits clause. The Supreme Court of Canada in R. v. Oakes (1986) stressed that section 1 must be applied cautiously. There must be a proportionality between the governmental objective and the means employed. The objective must be a pressing and substantial one and the means adopted must limit rights to the smallest extent possible. Chief Justice Dickson in R. v. Oakes (1986) emphasizes that giving effect to rights will be the norm and limitations on them the exception.

Can the school boards plead financial restraint or administrative inconvenience as "reasonable limits" under section 1 of the Charter for failing to provide equality to students who are disabled? Lack of funds is no answer to inequality of educational opportunity. It cannot be an absolute defence but may form a limited defence, and one of the factors to be considered by the courts [Singh v. Minister of Employment (1985)]. The school board would have to present a reasonable and feasible plan for bringing itself into conformity with section 15 within a reasonable time period. This approach would allow costs to be spread out and absorbed without undue disruption to government services.

Another possible challenge under section 15 of the Charter is the regional and provincial discrimination regarding special education services. An interesting example of such a challenge can be seen in the United States decision of San Antonio v. Rodriguez (1973). A group of parents challenged the school finance system. A challenge to the allocation of funds was made on the basis that children in poor districts were not given the same opportunity as those in wealthier ones. The parents lost and the system of school financing survived the constitutional challenge. This was in part due to the fact that economic discrimination produces only minimal scrutiny in the United States and the general judicial reluctance to mandate expending government funds. If Canada adopts a similar approach, then attacks upon how a school board allocates its funds will be difficult to sustain. However, if the funds are distributed in such a way as to violate one of the listed grounds, the school authority may be in greater difficulty. For example, unequal distribution of funds for special education services between regions of a province may also be a violation on the basis of disability, and thus harder to defend [MacKay (1986 a)].

Section 36 of the Constitution Act, 1982 spells out the federal and provincial governments commitment to eliminating regional disparities and providing essential public services to all Canadians. A "commitment" by a government is not, however, the same thing as giving a guarantee of a right. It expresses the government's good intentions and can be used to help interpret other parts of the Constitution Act

De Zwager and Stewart (1983) argue that the government is committed not only to providing essential public services but also to paying for them under section 36; the Constitution anticipates that an order for government funding can be given as a "remedy" under section 24 of the Charter. Section 36 could also be used to defeat an argument by a government that the denial of Charter rights for the disabled is justified because of the cost involved. A broader and more compelling point raised by de Zwager and Stewart (1983) is that there is something offensive about putting a price tag on the cost of educating a human being. Money can often be found if governments are willing to rearrange their priorities.

VII Concluding Thoughts

There has been recognition, as early as Brown v. Board of Education (1954) of the vital nature of education in a free and democratic society. Considering how crucial education is to the liberty and security of all persons leads to the conclusion that a price tag cannot be put on educating a human being. Weighed against the concerns about the increased costs of judicial intervention into the educational system should be the reality of the even greater costs to society if educational equality is not provided.

The Charter, especially sections 7, 15 and 24 is a new tool to fight for the rights of students who are disabled. It is important that education be provided to all on the basis of equality and that those students with mental or physical disabilities have full access to the benefits of education. If the Charter cannot be used to improve the position of the disadvantaged in Canadian society, then it was hardly worth the effort. In order to achieve true equality the government must initiate positive programs and ensure that they are accessible to all. Simply refraining from discrimination is not enough to correct the persistent inequities that face the disabled in Canada. If the courts are at all creative under section 24 in granting remedies for violations of the rights of the disabled, it may be possible to attain goals through legal action which could not be achieved legislatively.

Accepting that some Charter challenges can be prevented, while others are inevitable, adds to the accountability of the teachers and the educational institutions. Setting standards of competency will force teachers and the educational institutions to think more clearly about their jobs and the ultimate beneficiaries will be the students for which the educational system exists. Faced with providing "appropriate" education to those students who need special education, educators and judges are being presented with the challenge of becoming partners in implementing equality in the schools.

In some respects the arrival of the Charter will be a curse for those involved in education. On occasion concerns about legal liability will stand in the way of good educational practice. On balance, however, the Charter may prove to be more of a blessing, especially for the disabled consumer of educational services. To the extent that it will be a curse it is reminiscent of the Chinese curse - "may you live in interesting times". Interesting times lie ahead for lawyers, educators and students.

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COMPUTERS IN SPECIAL EDUCATION: USING TECHNOLOGY TO MAKE UP THE DIFFERENCE

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COMPUTERS IN SPECIAL EDUCATION:
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In our modern information age, computers are everywhere. They are in our cars and our washing machines as well as our businesses and our banks. In recent years, with the advent of the microcomputer, computers are finally making their way into our schools in large numbers.

The bulk of computer use in our schools so far has been for teaching programming to regular students. More and more however, pioneering teachers are experimenting with the use of computers to teach cildren with exceptional learning needs. Some of these applications attempt to develop programs that can compensate for a child's difficulty with inputting or outputting information whether it is due to visual impairment, a hearing loss or perhaps with an inability to speak. Other applications focus on the exceptional child's cognitive impairments. The development and use of computers in both of these areas are beginning to have a impact on the way the exceptional child is taught. Hopefully it will ultimately also have an impact their ability to lead a productive independent life.

This paper reviews the current role of microcomputers as either a cognitive or sensory prostheses. Since cognitive prostheses are by far the most numerous, much of the discussion will concern these applications. In each case, the main characteristics of the approach will be outined then followed by an evaluation of its potential for meeting the learning needs of exceptional students.

PROGRAMS FOR AUGMENTING THE MIND

A large variety of different approaches to using computers with exceptional students have been proposed and attempted (Goldenberg, Russell, Carter, 1984; Hagen, 1984). To evaluate these approaches, it is useful to keep separate two different types of learning -- declarative learning and procedural learning. Declarative learning refers to the learning involved in the acquisition of the facts related to any topic - the acquisition of number facts in arithmetic, historical dates, the names of the capital cities in Canada and so forth. Procedural learning on the other hand, involves learning how to manipulate those facts in meaningful ways. It is concerned with the ability to see patterns in the information being presented, to manipulate and synthesize new relations from old ones, to be able to construct models in the information domain in which one is working in. In short, declarative learning refers to the acquisition of information; procedural learning refers to the acquisition of knowledge.

Declarative Learning with Computers

Drill and practice

Among the first situations in which computers were used in schools were learning situations in which the primary goal was to consolidate previously learned declarative information. Such consolidation has been traditionally achieved by frequent repetition, that is by drilling students until their responses became rapid and automatic. Drill and practice activities were obvious candidates for computerization and were among the first types of programs to become available for teachers in the classroom. It is important to keep in mind however that the drill and practice program does not attempt to actually "teach" the material. As the name implies, these programs are primarily used to practice a student on material that has already been taught by other means.

At present there are a large number of quite effective, reasonably priced programs for practicing students in all sorts of things. They are available in areas as diverse as basic arithmetic, spelling, and learning about prefixes and suffixes. In fact there are now a significant number of program packages that attempt to provide drill across the complete elementary school language arts and mathematics curriculum (e.g., see the Milliken Mathematics series and the Milliken Language Arts series).

When educators complain about the lack of suitable software for computers, they are usually reacting to the quality of the early drill and practice programs. These are among the easiest programs to implement and hence were among the first programs to be made available to teachers. Unfortunately much of the earlier work was produced by people whose main skills were in programming and computer technology rather than in pedagogy.

Tutoring

A second basic class of programs that are used for declarative learning are tutorial programs. They differ from drill and practice in that in addition to posing questions on the subject matter, tutorials contain a description or explanation of the concepts being taught. The basic format of a tutorial is to provide some instruction then ask questions to see if the student understands On the basis of the student's performance, further instruction is given. Tutorial programs are now also available for a wide range of topics covering subject material as diverse as history, grammar, sentence construction, astronomy and even basic social and life skills.

In general, computers are extraordinarily well suited for providing declarative learning opportunities either in a drill and practice mode or in a tutorial mode. Computers can be programmed to be completely flexible in terms of the content, the rate, the pacing and the type of information presented to the student as well as the degree of learner control. They can provide instantaneous feedback to the learner. Hence the computer is ideal for developing a fully individualized and personalized declarative learning environment.

To this must be added the fact that unlike almost any other type of declarative learning situation, students seem actually to enjoy doing drills and tutorials when they can do them on a computer.

The individualization that is part of the computer based declarative learning environment is ideally matched to the special learning needs of the student with a general or specific learning disability. Students with these difficulties seem to require endless amounts of practice with most material before retrieval becomes automatic and fast enough to be functionally useful. Computers have great potential for providing the extensive practice that is necessary. In fact, in some situations, computers seem to be the only approach that has any chance of achieving success. This is not to say of course that teachers should attempt to make the computer carry the whole teaching burden for the exceptional student's declarative learning. It is only to point out that the computer can be used as a very effective teaching tool for this aspect of the exceptional learners' school experiences.

"Intelligent" tutoring

A relative newcomer to the tutorial scene is the so-called intelligent tutor or intelligent computer assisted instruction (ICAI) (Hayes-Roth & Thorndyke, 1985; Pea, 1985). Unlike its older brother, intelligent tutors do not have a fixed set of rules that are used for branching to present some particular material depending on the student's answer to a set of questions. The basic approach taken in an intelligent tutor is to try to mimic, as far as possible, the behaviour of a live tutor.

A typical intelligent tutoring program starts out by having a relatively natural language dialogue with the student. During this dialogue, the program attempts to determine just what the student's skill or knowledge level is in the domain to be taught. Once the student's knowledge level is established, the program decides on the best type of material and best mode of instruction for this particular student. The optional instructional mode include such things as hints towards a solution, sets of relevant problems for the student to try to solve that illustrates a particular point, appropriate "coaching tips" or perhaps some textual or pictorial information to supplement an explanation. The most appropriate material and instructional approach used at any point is based on the program's "diagnosis" of the student's current learning state as well as the program's (and hence the programmer's) best guess as to the most appropriate way to move the student to the next higher level knowledge state. A properly implemented intelligent tutor then must have a large number of student "models" or representations of the various knowledge states that students typically have about a topic. These representations should include the most frequent misconceptions students have of the material as well as the correct conceptions. In addition, the program has sets of rules to guide it in selecting the specific types of assistance to use depending on the currently diagnosed knowledge state.

Prototype models for intelligent tutors are available now in quite a variety of subject areas. Some of them deal with what initially might appear to be quite simple tasks such as teaching basic addition and subtraction (Brown & Burton, 1978). Although the task seems simple, the program for teaching it isn't! This particular program has a very complete error analysis routine for detecting "bugs" in children's thinking about addition and subtraction that itself requires more than 150,000 lines of code.

Other intelligent tutoring programs have been written for more complex topics such as high school algebra and geometry (Brown, 1985), programming in LISP (Anderson & Reiser, 1985), and medical diagnosis (Clancey & Letsinger, 1981). While several of these programs such as Anderson & Reiser's are now available as products that can be used to teach students certain topics in a standard teaching environment (i.e., the LISP programming course at Carnegie Mellon University), for the most part, these program are still in the prototype stage. Moreover, they are large programs that usually require much more powerful computers to execute than are usually available in today's schools. The developers of these programs however are promising to have operationally effective and economically intelligent tutoring systems available for schools within five years.

Will these intelligent tutoring programs be more effective with exceptional learners than their dumber brothers have been? Like their predecessors, intelligent tutoring programs have at least the initial advantage of offering the student instruction that is totally personalized and a tutor whose attention is devoted solely to that single student.

The question is whether the knowledge states that an exceptional learner goes through in mastering some material is any different than what a normal student goes through in mastering the same material. Will the misconceptions the exceptional learner develops be different in some way and if so, how? The fact that they may be a different notion is not in itself a problem. The knowledge base of an intelligent tutor is built up gradually over time as a result of successive encounters with students. If exceptional students were included as part of the mix of experiences to which the tutor was exposed, then whatever idiosyncratic states there are associated with exceptional learners would be included.

Procedural Learning with Computers

There is little question that a very effective declarative learning environment can be built around computers for students of all ability levels. A much less certain issue is just how effective computers are in procedural learning situations. As mentioned before, procedural learning requires situations where the learner is able to actively manipulate information, to generate and test hypothesis and evaluate the results, and to explore the implications of synthesizing old elements in new ways. When we talk about declarative learning we usually talk about rote memorization. When we talk about procedural learning we talk about understanding, interpreting, and being able to make inferences.

The first attempts to provide computer based learning environments for procedural learning were of two basic types. The first type was the computer simulation. The second was the teaching of programming as a way of providing an opportunity for procedural learning. The third and most recent approach is to design computer based "cognitive tools" that can augment the various cognitive activities carried out in the performance of some intellectual task. The emergence of cognitive tools seems to have the most profound potential for altering both the way we teach as well as the kinds of things students learn. It has a special significance for the exceptional learner since these cognitive tools provide the possibility of being a cognitive prostheses.

Computer simulation

As the name implies, computer simulations are programs that mimic or simulate some real-life situation. Some of the more popular simulations are programs that simulate the operation of a simple business (e.g., a lemonade stand) or a country's economy. Others simulate more complex or perhaps dangerous situations like the operation of a nuclear power station during a threatened meltdown.

To get an idea of the types of activities the students engage in while working with one of these simulations, consider two recent simulations that seem to have substantial educational value. The first of them is an imaginative adventure style game designed to teach Canadian history. In this program, the student can play the role of great Canadian explorers as they explored Canada. Hence they can make decisions that lead to "getting lost" or being "attacked by Indians" or of "dying of scurvy".

The second simulation,**Carmen de Sandiego**, focuses on geography and social studies. In this program, the student tries to track down international criminals. On different adventures, the criminals flee to different parts of the world. The student follows the fugitive by gathering clues as to her whereabouts from hotels, airports and the Interpol offices in various countries. The cues however are not straightforward. They refer to such things as currencies of different countries and to ancient countries that are no longer on modern maps so that the student must look up the pertinent information on the encyclopedia or maps provided with the program in order to make sense of the clues. Thus, in addition to the geography it teaches, the program provides a motivating environment that encourages the student to learn how to look up information in various sources and put together in order to draw the proper inference.

Good educational simulations should have a number of features. One of them of course is realism. A second is the presentation of an active responsive learning environment that is motivating for the student to explore. The third and most important feature from a pedagogical point of view is that the simulation provide an opportunity for the student to come to an understanding of the system through a cycle of hypothesis proposing, testing then deciding on which hypothesis to try next on the basis of feedback received. It encourages systematic thinking. If one wants to gain full control of the simulation, one must systematically manipulate the variables and synthesize the results of those manipulations. On the other hand, it should not be too pedantic. Anyone should be able to "play" casually in a simulation environment and learn enough to find it interesting.

Recently developed simulations are becoming extraordinarily complex. They are complex both in terms of the area which is being simulated and in terms of the realism of the simulation. A particularly impressive example of the new genre of simulations is **STEAMER**, a simulation designed to train U.S. navy seamen in the complexities of starting up a steam boiler on a ship (Hollan, Hutchins, & Weitzman, 1984). An even more famous simulation program, SOPHIE, was developed earlier to teach electrical engineers about the intricacies of electrical circuits (Brown, Burton, & deKleer, 1982). These simulation programs demonstrate some of the more advanced techniques that we will probably see in the school simulations of tomorrow. At present however, they require far more computing power than is available in today's schools.

Which type of exceptional learner can profit most from the simulation approach to a computer based learning environment? The open endedness of a simulation environment and the emphasis on learner control are characteristics that would seem to make simulations particularly well suited to the learning style of gifted learners. Properly designed simulations however can be played at a number of different levels. Hence simulations are generally highly motivating, effective learning environments for student of all ability levels.

Learning to program

The second major approach to providing procedural learning opportunities in schools is through programming courses. The most frequent use of microcomputers in today's schools is for teaching programming. Moreover there is a great deal of rhetoric promoting the teaching of programming and programming courses are being increased at the expense of other things. Given these circumstances, it is important to consider carefully the justifications people present for teaching students to program.

Programming as a vocation: The early arguments for teaching programming to students were not based on the value of programming courses for teaching general thinking skills. Rather they were based on the notion that society is entering an information age in which it will be critical for all citizens to be computer "literate". Moreover it is the responsibility of the schools to make sure the students become computer literate just as it is the school's responsibility to teach them to read and write. According to some of the early computer zealots, computer literacy is not simply knowing about computers; it is knowing how to make them do what you want them to do.

Some also claimed that the programming skills being taught in school could be justified in terms of providing a useful vocational skill. It would open up potential job opportunities for the students in the coming information age. The same set of arguments applied to teacher training produced the claim that all regular classroom teachers should also be taught to program. After all, if teachers are going to be able to use computers effectively in their classroom, isn't it necessary for them to learn to program?

The short answer is "no"! As the potential role of computers has become better understood, it has become increasingly obvious that it is not necessary for either the teacher or the student to become a programmer in order to be able to make very effective use of a computer as a teaching and learning tool. The student does not have to know how to write a simulation program in order to learn from it anymore than the teacher has to know how to design or develop a wordprocessing package in order to be able to make very effective use of a wordprocessor in the classroom. Furthermore, the potential job opportunities in the programming field are not nearly so numerous as was once anticipated and the level of programming proficiency necessary for a commercially employable programmer is not achievable in a regular school course. Programming at a commercial level is a highly skilled, specialized talent that is unrealistic to expect a large proportion of the population to have.

In short, the early arguments for teaching programming either as a necessary part of a general course in computer literacy or as a job training activity are simply valid. This is not to say that no student should learn to program or that no programming courses should be offered in the schools. It is only to note that the reasons presented for offering programming in schools should be carefully scrutinized.

Programming as a way of teaching thinking skills: If one cannot justify programming as vocational training or as a necessary part of a computer literacy course, can one justify it on the grounds that it provides an important procedural learning experience? Here the issues are much more interesting and important for the educator. The most imaginative and persuasive of the apologists for the use of programming to teach thinking skills is Seymour Papert.

Papert, an MIT physicist who studied with Jean Piaget, is the inventor of LOGO, the most widely used "educational" language in the schools. Papert has been the most provocative of the advocates for teaching children to program as a way of exposing them to a powerful and flexible procedural learning environment (see Papert's 1980 book, Mindstorms, for his most complete and eloquent statement of his point of view).

According to Papert and his many followers, when children program in LOGO, they are also learning many very important thinking and problem solving strategies. They spontaneously master many "powerful ideas" such as the importance of breaking up a complex problem into "mind sized bytes", of developing a logical, ordered sequence of steps in working towards a solution, of systematically testing one's hypotheses in order to detect and correct "bugs" in one's thinking. For Papert, the LOGO learning environment contrasts sharply with computer based drill or tutorials. The important distinction is who is in control of the learning: the child or the computer. LOGO supporters believe it is axiomatic that it is better to have the "child program the computer" than the "computer program the child".

In principle, any computer language, such as BASIC could be used to provide this type of procedural learning environment. LOGO however has some features that make it especially easy to use this way. What has been built into LOGO is the possibility of constructing a wide range of different "microworlds" or cognitive playgrounds for the child to explore. Although LOGO comes with a fixed set of primitive commands for manipulating text, graphics and music, its beauty and power is that it is so easy to redefine. With relatively little effort, teachers can define and build completely new sets of commands out of the basic primitives in order to construct a programming environment specifically suited to a particular student population or subject area. In that sense LOGO is a general purpose educational tool for constructing various types of learning environments suited to the needs of specific students.

Some concrete examples will make this feature of LOGO clearer. The commands used to change the background colour of the screen in LOGO is the screen command ("background") followed by a code number to indicate the desired colour (e.g., "background 4" changes the screen colour to blue). Suppose the teacher wishes to use the computer as a way to reinforce the student learning colour names. To do so, the teacher could simply relabel the "background 4" command to be "blue". From then on, whenever the student types "blue", the screen colour on the monitor would turn blue.

Similarly most LOGO primitives require the user to type in two pieces of information, a command (e.g., the "background" in the example above) and a parameter or number value that provides additional information needed by the command (e.g., in this case the "4" to indicate the colour). This amount of typing however may not be suitable for the very young student or the student who has severe physical disabilities. In LOGO that poses no problem. Simply redefine the commands to be single keystrokes. Similarly the basic graphics commands to draw lines and turn through angles can easily be redefined into a microworld where the primitive drawing commands are to draw houses or streets or trees or whatever else makes for an interesting and manageable environment for the very young student.

In summary then, the power of LOGO does not reside in it being easy and quick to learn or even in the motivational value of being able to draw and produce music as well as manipulate words. These are clearly nice features to have but its true power is in its potential for building whatever type of learning environment the teacher feels is best suited to the needs of her specific students. LOGO's effectiveness in the classroom however is far from automatic. The successful use of LOGO in the classroom depends critically on the creativity and imagination of the teacher. Finally, although LOGO is the most publicized example of a programming language that is designed specifically to provide a procedural learning experience, other languages like BASIC could in principle be used in much the same way. They are not quite so good however since they are not quite as motivating particularly for young students and they require somewhat more work on the part of the teacher to use.

Initially, it might be assumed that the procedural learning potential associated with learning to program would not be particularly relevant to special education or at least be restricted to the above average or gifted students who seem to thrive in open ended, unstructured exploratory problem solving environments. Isn't it reasonable to assume that students at the other end of the intellectual continuum would not have the basic cognitive abilities to master programming let alone take advantage of the programming experience to acquire some procedural learning skills? Students with specific learning disabilities in particular have very short attention spans and lack the ability to attend to detail. Surely these students would be especially poor candidates for a programming course.

Such assumptions, while superficially quite plausible, turn out to be quite wrong. Some of the work for example done by Lindsay and Marini (1982) using computers with students who have severe and long standing specific learning disabilities suggests the opposite is true.[1]

According to Lindsay and Marini's work, not only are these students capable of becoming quite proficient programmers in both BASIC or LOGO, they seem to enjoy the activity enormously! Whatever lack of attention span or concentration they show in other contexts, they certainly don't show it when they are working on the computer.

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[1] The category of "specific learning disabilities" is primarily associated with someone who is of average or above intelligence but has a great deal of difficulty acquiring proficiency in oral and written language.

Perhaps this ability to learn to program is not so surprising as it first appears to be. Most programming languages including BASIC and LOGO have very restricted vocabularies, relatively simple rules for making up new words in the language and a straightforward uncomplicated syntax. While programming languages do require rigid adherence to the rules, the programmer gets instant feedback in the form of a "?" or a "SYNTAX ERROR" from the computer if he or she makes a mistake in writing out the commands. If the error is in the logic or "semantics" of the program, then the computer will produce the wrong answer or perhaps no answer at all.

In these terms then, learning to program is really just another language learning experience for the exceptional learner but there is a difference. Like natural languages, a computer language has the motivational value of being functional. Once it is mastered, it can then be used instrumentally to obtain student defined goals. Unlike natural languages, programming languages are simple, explicit and precise. Providing a learning disabled student with the opportunity to learn to program may provide, perhaps for the first time, an opportunity for a successful and rewarding language learning experience.

Tools for manipulating language

Potentially the most powerful of the applications of computers in the schools today is the provision of computer based "cognitive tools". Because these programs are designed to augment our intellectual abilities, they are particularly relevant to students who have cognitive or communication disabilities. There is an important issue with regard to these tools as to whether they augment our cognitive processes or actually change the way we carry out a cognitive task. It is an interesting debate but it is beyond the scope of the present paper (see Pea, 1985, for an excellent and relatively recent summary of the current status of thinking on this issue). There is little debate however about the type of learning that is associated with the use of these tools --it is clearly procedural learning.

Of the cognitive tools currently available for teachers working with exceptional students, those associated with language and text manipulation are certainly the best developed and most widely available. Within the category of language tools, wordprocessors are the prime example.

Wordprocessors: The first generation

Certainly the most prominent and popular tool used for language manipulation in the classroom is the wordprocessor. Every modern microcomputer comes with a wordprocessing program of some sort and many have several such programs to choose from. Moreover, the wordprocessing programs are usually among the most powerful and sophisticated of the programs that a manufacturer has to offer.

These business oriented wordprocessors however are designed primarily as a tool for the secretary to use. Thus their main function is to facilitate the transcription of previously written or dictated text into final printed form.

In spite of their business orientation, many educators realized their potential as a tool for the teaching of writing very shortly after they first appeared. Since gaining their initial entre into the classsroom, the use of wordprocessors has grown enormously. A recent survey by the Toronto Board of Education (1985) for example found that, of all the potential educational applications of computers, elementary school teachers feel that wordprocessing is by far the most promising and important. These same sentiments have been echoed by teachers across the province.

It is impossible to predict in detail just how the widespread use of wordprocessors in schools and presumably eventually in homes will ultimately effect the speed and way in which children learn to read and write in the future. Controlled studies in this area are essentially impossible to conduct. We do however have a large body of published anecdotal testimony from teachers who have tried using wordprocessors in their classrooms. For teachers working with regular students, their praise of the wordprocessor has been almost unanimously positive. For teachers working with students with specific learning difficulties, the reviews have been positively raves(see Lindsay & Marini, 1982 for example). In short, the evidence is now quite substantial that at least from a teacher's perspective, wordprocessors are a very beneficial tool for working with students who have different types of exceptional learning needs (Lindsay, 1983, Humphrey, Kleiman & Lindsay, 1978).

It is not very difficult to see why wordprocessors are such an effective tool for working with students who have had such difficulty mastering print in school. First they seem to find computers a highly motivating instrument to work with. Frequently the introduction of wordprocessors into the classroom leads even the most discouraged student to make one more attempt at mastering print. Second students find it much easier to transcribe their ideas into print when working with a wordprocessor. Recognizing and pressing a key is far easier for these students than trying to form legible letters by hand (Lindsay, Woodruff, Bryson & Joram, 1986; Bryson, Lindsay, Woodruff & Joram, 1986). Third, the appearance of the document is important. Usually it is for the first time with a computer that the exceptional student can produce a highly professional looking final product (Lindsay & Marini, 1982; Daiute, 1985). With some of the more sophisticated printing packages that are now available, students are able to set up and print a wide range of very high quality products in many varying formats from invitations, to posters, to newspapers to books.

Learning disabled students are not only willing to write more on a wordprocessor than they do with paper and pencil (ECOO, 1985), but they also seem more willing to try to find and correct the errors in what they have written. This may be because with a wordprocessor, students can correct their errors without running the risk of making more in the process. The computer has the advantage of not changing material that is already correct when printing out a corrected version of a text. Nor will the students have to laboriously copy out the whole text again after the corrections have been made. For students for whom penmanship is so difficult and bad, recopying a text after a correction has been made is often a counterproductive and painful exercise, they most likely will end up with more errors than they started with.

Similar, though not nearly so dramatic effects of wordprocessors have been reported recently for students at the other end of the intellectual continuum, that is students who are particularly adept at writing. Lindsay and his co-workers (Lindsay, et al 1986; Bryson et al, 1986) have found that above average grade eight student writers produced texts judged to be of significantly higher quality and more creative when they were working with wordprocessors than when they were using paper and pencil. Moreover, an analysis of think-aloud protocols taken as the students composed and revised their texts showed that working on the computer resulted in a significantly greater concern with the higher level rhetorical aspects of composition such as audience appeal and overall text cohesion than when the talented writers worked with paper and pencil. None of these effects were found with the average grade eight classmates of the talented student writers.

In summary then, the research to date indicates that a wordprocessor is an extremely effective writing tool across a wide range of curriculum activities and student ability levels. In fact computer based wordprocessors are sufficiently useful and powerful as teaching assistants for working with exceptional learners that they in themselves justify the purchase of computers even if wordprocessing was the only program to be used.

Educational wordprocessors: What makes them different

As mentioned above, the first wordprocessors to be used in the classroom were essentially business oriented wordprocessors designed to make the secretaries' transcription task faster and easier. When it began to be realized that wordprocessors might be useful in the teaching of writing, the first wordprocessors designed specifically for school use began to appear. The most popular of these was the Banks Street Writer, produced by the Bank Street College of Education.

Safety nets: The Bank Street Writer introduced a number of features not usually found in the business wordprocessors of the day. One of these features was the extensive use of "safety nets" designed to protect the student from his or her own errors. One of these safety nets was to question the student before any significant change or deletion of material to make sure that what was going to happen was what the student intended to happen. This greatly reduced the chances of the student inadvertently losing his or her text. A second type of safety net was designed to allow the user to change his or her mind after the fact. Thus you could not only delete, you could "undelete". Similarly you can "moveback" after you move something.

The second basic design feature that was introduced in this first generation of educational wordprocessors was the extensive use of on screen prompts to inform the user what the permissable commands were at any given point. Once a command was selected, prompts appeared to coach the student in how to use it. This minimizes the necessity for extensive training or reference manuals and maximizes the support given the novice user.

This first generation of educational wordprocessors then were "educational" only in the sense that they were built on the premise that the primary user would be a tentative and perhaps timid novice student who is just learning how to write rather than a professional secretary who is using it to transcribe someone else's writing. They did not incorporate any assumptions about the nature of the writing process as such or how best to teach it. Wordprocessors that emphasized particular approaches to the task of writing didn't appear until the next generation of educational wordprocessors.

Second generation educational wordprocessors

Top down versus bottom up writing: One popular assumption about the best way to go about writing something is that one should first make an outline of the material then fill in text according to the outline. According to this assumption then, good writing is "top down" affair in which one should start with an outline first. This assumption has been incorporated in the design of two popular wordprocessing programs -- Thinktank by Living Videotext and Framework by Ashton-Tate. Both of these programs are designed to make it easy to develop and work with outlines at varying levels.

Not all educators however believe that doing outlines first is the best way to write. One of the most recent and exciting of the new educational wordprocessors is a program called **NOTECARDS** (Brown, 1984). This wordprocessor makes it particularly easy for the writer to record essentially random notes as they occur to him or her while reading or thinking about a topic then organize these "notecards" after the fact into whatever coherent structure seems appropriate. In fact the user can experiment with a variety of organizations and NOTECARDS provide various some very nice graphic aids to help him do this.

Thus NOTECARDS is designed to facilitate a "bottom up" approach to writing and in this sense is essentially the opposite to THINKTANK and FRAMEWORK. Unlike its two competitors, however, it will also support the writer who prefers to write top down.

Perhaps the most important lesson to be learned from these examples is that there probably is no one "best way" to approach the writing task. For mature writers, the way in which they feel they write best is highly idiosyncratic (Smith, 1984). What works best for one person may be the worst possible approach for another. Given this conclusion, it is clear that when the teacher or administrator comes to make a choice of a wordprocessor, they should try to find one that is equally adept at supporting the writer who wants to write top down as the one who wants to write bottom up. The most attractive feature of a microcomputer as an educational tool is its ability to be personalized to the needs of the individual. This critical feature should not be foiled by making too strong a commitment to a particular writing or teaching philosophy in the choice of one's software tools.

Proofreading assistance

In general, wordprocessors are designed to facilitate the transcription and production aspects of composing and revising texts. A number of other programs are also being developed as part of an increasingly large set of language tools that are primarily designed to help with proofreading the text after it has been produced. Although the first programs to appear in this class focused on spelling errors, there are programs now to analyze "stylistic errors" as well. As a group, they have particular relevance to the exceptional learner since finding errors is a special problem for these students.

Checking spelling: The most important and widely available example of proofreading programs are those that check the spelling in a document. Spelling checkers are now part of almost all new wordprocessing packages. They work simply by reading a document and flagging any words that are not in its dictionary. Many of these programs can be switched "on-line" so that they give an immediate warning as soon as you type in an incorrect word or they will check any particular word on request.

The most sophisticated of the spelling packages not only flags the words that are not found in its dictionary, but also suggests the words that are most likely to have been meant. These suggestions are based on an analysis of common types of spelling errors people make as well as what legitimate words sound most like the word that was typed in incorrectly. Many of these programs will also allow the addition of words to the dictionary so that the dictionary can be personalized to the user's idiosyncratic vocabulary. Finally, many of these programs will provide a printout of all of the errors found in a text. This latter feature is particularly useful to help teachers keep track of how students are doing.

Spelling checkers are extraordinarily useful tools for teachers working with learning disabled students. These students are extremely prone to making spelling mistakes. The program to check spelling can go a long way towards taking much of the drudgery out of constantly having to check the student's work. The program can make the first pass through the work and pick up the majority of mistakes before the teacher has to get involved. It is important to note however that the program is far from foolproof. The teacher still must do a final check. Since the program doesn't know the meaning of the words, it will accept any word that is in its dictionary regardless of the context.

The spell checking program does make it possible for the students to become much more independent and responsible for finding and correcting their own errors. Moreover, since the program doesn't actually correct spelling for the student, the program can be used as an instructional aid. For each spelling error in her text, the student must identify which of the alternatives presented is the correct spelling or that none of them was the one intended.

Checking grammar: Spelling programs are currently the most widely used proofreading programs but some initial work is also being done on programs that can automatically identify grammar errors. The problem of detecting grammar errors is much more complex and hence these programs are far from being ready for mass distribution into the schools. When such programs do become available however, one can anticipate that, like the program for checking spelling, grammar checkers will assist students in becoming still more independent in being able to produce a correct document largely on their own.

Style analysis: Finally, in this general category of programs designed to help the writer analyze his or her text, the most sophisticated and complete set of program that have been developed to date go under the collective heading of Writer's Workbench (Frase, 1986). In addition to the standard things like checking the spelling, Writers Workbench programs identify and report statistics on more than thirty different "stylistic" features in a text. Overworked and ambiguous words, empty expressions, the number of colloquial expressions, unnecessary wordiness, the degree on concreteness (and therefore presumably clarity) of the writing are some of the many text features that are tabulated and reported.

Although without question, Writer's Workbench is the most ambitious "proofreading" program currently available, in terms of a demonstrated impact on improving writing, the verdict is not yet in (Keifer & Smith, 1983). It was originally developed at Bell Laboratories to help train commercial technical writers write more clearly and it seems to work well in terms of that objective. Its value for genres other than descriptive technical writing and its potential for the novice or the problem writer however has not yet been established empirically.

In principle, looking for mechanical errors or surface errors after drafting a text is an important part of learning to write clearly and well. Programs that provide help in this proofreading phase therefore should be useful in the classroom. Moreover they should be a particularly valuable aid to the exceptional learner who has so much trouble with the mechanical aspects of writing.

It is important to keep in mind that the programs developed so far focus exclusively on analyzing the superficial aspects of a text. Essentially they can only deal with what can be analyzed without knowing what the words mean. This surface level of analysis is fine for the novice or the problem writer since mechanical correctness is something they have trouble with and can use help on. Such programs however have much less utility when it comes to supporting the more advanced or talented writer. These students need help with learning how to make "meaningful" rather than mechanical revisions in the text. Computer tools to help instruct students in these higher level revision strategies are not even on the drawing boards yet let alone ready for distribution to the schools. file: finknowl

Tools for manipulating knowledge

A relatively new cognitive tool has appeared on the educational scene that seems to have the potential for providing a very powerful procedural learning environment for students. This newcomer is the **database management** program. Although database programs have not as yet achieved the popularity or acceptance as wordprocessors, in the long run these programs have the potential of becoming even more widely applicable as a tool to support procedural learning in the classroom.

Database management programs can in principle be used to structure, organize and record any body of knowledge. To use such a program with a particular body of knowledge, the students or teachers must first define the characteristics of that knowledge. This involves deciding on the basic units or "records" of information that make up the knowledge base (e.g. a particular student's record in a student database, a vocabulary item in a lexical database) then on the specific features or characteristics that is to be associated with each unit of information (the name, address, and grades of a student; the part of speech, possible endings, subset, superset, and semantic meaning of a lexical item). After the basic unit of information and its characteristics have been decided upon, information can be entered into the database by recording the characteristics of each unit of information that is entered. Once the information has been recorded, any item or set of items can be searched for and retrieved by specifying the values of the characteristics of the sought after items. What the database program does is provide simple ways of defining the basic structure of the data then subsequently retrieving and tabulating the information in that database.

Teachers have reported using data base programs in classrooms to help students think about, organize and investigate the relationships among the information items in a wide variety of different knowledge domains. Sometimes it is used primarily as a fun activity such as having students try to define a database that would be appropriate for a "dating service". To define such a database, it is necessary to determine the most important type of information you have to know in order to match up boys and girls that will like each other. This activity can lead to an interesting exercise in sociology. Other teachers have used database programs as part of a science project to track and tabulate the changing patterns of nature during fall and spring. Still others have used a database program to encode and teach the relationships among roots, prefixes and suffixes in a set of words. In addition to their educational uses in the classroom, database management programs can of course also be used as a classroom management tool by the teacher.

In terms if its application to special student populations, once again the first choice would probably for working with gifted students. For intellectually superior students, database management programs offer a wealth of potential challenging opportunities for thinking about, encoding and working with information in a variety of new and different ways. Precoded databases such as the Colliers Encyclopedia are now available in machine readable form for under $300. They might even go on, if finances permitted to explore some of the many commercial databases that are now accessible to anyone at quite modest rates (e.g. $10 per month). Commercial databases usually have electronic mail facilities associated with them so yet another new and exciting experience can be explored.

Would cognitively impaired students be able to acquire the skills necessary to use these new information manipulation tools. Databases are still relatively new to the classroom so we don't yet have the empirical data we need to answer this question unequivocally. If the their ability to use wordprocessors and master programming are good predictive guides however, then there are considerable grounds for optimism. If it turns out that they can master the basics of database systems, then they will have acquired access to one more potential cognitive prothesis that can help to normalize their school experiences and ultimately to increase their chances of leading a productive, independent life.

Mirroring the mind

The final class of computer tools for structuring learning environments to be considered is too new to have an agreed upon name yet. Generally goes under such terms as teaching metacognitive skills or procedural knowledge or sometimes by the rather cumbersome label of "computer supported intentional learning environments" (or CSILEs for short) (Scardamalia, 1986). The main idea behind this work is to try to develop techniques to teach students how to reflect upon and begin to understand their own cognitive processes. One thing that is needed is some way of holding up a mirror to the student's minds as they are doing some cognitive task in order to capture their problem solving activities. By externalizing the student's cognitive activity, their thought processes themselves can become an object of study that can be reflected upon after the task is complete. One question for current developers then is how can the computer be used to help externalize the student's thinking behaviour?

There is a particularly good working prototype of such a system which captures enough of the basic ideas that a review of this system should help clarify both the intent and the potential of this approach. For a change, the content area is algebra not language. The topic is solving differential equations in algebra. One traditional way of teaching this topic is for the teacher to present the equation to be solved, then suggest some operators that the student should try. The operators might be things such as "Try dividing through by a common factor" or "Try simplifying the expression on the left". The student's job is largely mechanical to do the work associated with applying the operator. With this approach the teacher is doing the high level thinking work of deciding on the most appropriate operator to apply and when to apply it. The student is doing the mechanical work of carrying out the arithmetic operations.

An ingenious program called **AlgebraLand** (Brown,1984b), that incorporates many of the features of a fledging CSILE, has been developed at the Xerox Parc Palo Alto research centre to teach grade 10 algebra students. The program poses a problem to the student [e.g., $4(2 + N)=20$] and displays the various operators that the student can choose from. When the student chooses an operator (by pointing at it with a mouse), the computer will carry out the necessary arithmetic and display the equation after the operator has been applied. The student can then choose another operator and continue until he or she has solved the equation or given up.

Thus one thing AlgebraLand does is to act as a computational tool that frees the student to concentrate on the higher level aspects of problem solving. A second thing it does is to build up a complete graphic record of the various solution paths the student takes as he or she attempts to solve the problem. This is how it acts as a mirror and produces an external record of the student's problem solving behaviour that can serve as data that the student can later inspect and evaluate.

Note that in AlgebraLand, the role of the student and the teacher has been essentially reversed from that of the live teaching situation discussed earlier. The student does the former teacher's job of deciding on which operator to apply and when to apply it while the computer does the student's former job of carrying out the mechanical arithmetic associated with applying the operators.

Though still a prototype, AlgebraLand has some very interesting features that are worth considering. It structures the situation so that the student can focus on the more creative aspects of a problem solving situation rather than on the mechanical aspects. It provides a graphic picture of the student's hypothesis testing activity during the problem solving episode that the student can compare with that of an expert solving the same problem or with herself solving different problems on different occasions.

In spite of its many positive features, AlgebraLand is somewhat deceptive as a general model. One of the reasons it works so well is that it is dealing with a very explicit problem area where both the possible operators and the solution paths are limited and well defined. Could the same technique be applied to fuzzier less well defined domains like writing? Could the provision of automatic spelling correction be considered equivalent to carrying out error-free arithmetic for the algebra student? In both cases, the computer is assuming some of the more mechanical aspects of a complex task. But what are the set of operators from among which the writer chooses as he goes about composing and revising her text? Can they be listed on a menu and automatically carried out on any piece of text by the computer at the push of a button? Obviously there are issues to be worked out in trying to generalize the ideas of AlgebraLand to other problem domains.

Nevertheless, AlgebraLand is a working example of a cognitive mirror and therefore is instructive as a prototype. It makes some rather vague ideas concrete. It also provides a working environment with which to experiment. Though it has yet to be tested, it may very well be for example that when freed from the burden of carrying out their highly error prone arithmetic, the learning disabled student looks much more like his normally performing peers than he does when his mechanical errors are there to confuse the comparison. How about testing the mathematical gifted on AlgebraLand? Would the "problem behaviour graph" showing the path to solution have any unique characteristics for a student who was particularly gifted in solving algebra equations? Could the principles incorporated in AlgebraLand be generalized to provide a computer based prothesis where the computer could do the low level mechanical tasks under the direction of the exceptional student and hence compensate for some of the student's deficits?

At the moment the number of concrete examples of systems that act like cognitive mirrors are too few to be able to predict what the range of applicability is likely to be or even if the ideas are valuable to have any long term staying power.

PROGRAMS FOR AUGMENTING THE SENSES

To this point, we have been dealing exclusively with the sue of computers to support the cognitive activities of exceptional students. Students with cognitive exceptionalities represent by far the largest group of Special Education students that school boards have to deal with. A much smaller number of students have difficulty learning in normal school situations not because of cognitive impairments but because they are sensorially impaired in some way.

As is the case in the cognitive domain, computers have a unique role as a potential sensory prostheses for the students who have either receptive impairments (e.g., the blind and the deaf) or expressive impairments (e.g., the student who is unable to speak). This latter group present a particularly poignant problem since their inability to communicate means that they are usually totally cut off socially from their age matched peers.

In principle, students with sensory or productive problems can profit as much from the cognitive tools discussed above as do the cognitively imparied

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students. They have an added problem. They may have to have a special "interface" in order to gain access to the tools. Fortunately a number of computer programs are available to augment the input or output of information.

Computers for students who can't hear

Regardless of whether the basic educational philosophy of a school jurisdiction is teach the deaf student to sign or to try to maximize the student's oral communication, all programs for the deaf attempt to help the student learn to produce as much understandable speech as he or she is capable of. Recently a number of specialized computer programs have been developed to help the deaf learn to produce understandable speech. In these programs, the computer monitors and displays a visual representation of the acoustic target signal that has been produced by the trainer. The child repeatedly speaks into a microphone trying to reproduce the same pattern she sees on the screen. When the child's utterance exactly matches the target utterance it will sound just as understandable. Since the child can proceed at her own pace and take as long as she likes to acheive the match, we have yet another example of the computer's ability to free the handicapped individual from a dependence on others, this time in the sensory domain.

Sometimes the computer turns out to provide a surprisingly good solution to a difficult problem that arises. An illustrative case of this involves a much older student than we have been considering so far. The student was enrolled in the Master's program after having been totally deafened and partially blinded by an operation to remove a brain tumour in his final undergraduate year. Since he could not hear and had only limited tunnel vision in one eye, taking classes was obviously a problem for him. The solution was remarkably simple -- a portable computer, a wordprocessor, and a notetaker. The notetaker sat in class with the student using the wordprocessor (Bank Street Writer) to transcribe the class lecture and discussion as it went along. The student was able to read from the screen and therefore participate in the class. As an added bonus, the student had a complete set of typed lecture notes that could be corrected by the instructor immediately after class.

Though it was not necessary for the student in this particular case, the text could easily have been displayed and printed in any print size if the student's vision had been poorer. Finally, the computer was also a helpful tool for integrating the student socially. It became his portable notebook that he could use for talking with people he met in the halls or at parties. One difference in these social interactions was that the computer maintained a permanent record of his conversations.

Computers for the visually impaired

In addition to specialized programs for the deaf there are also specialized programs for visually impaired students. The simplest solution for these students if their impairment is not too severe is to use one of the large print "utilities" that can be added to any program so that the screen or printer output is large enough for most visually impaired students to read. In some cases these utilities are built right into the wordprocessor. Print size becomes just one more option you select before you begin to write.

For those with no vision at all, there are "automatic brailers" that the student can use to transcribe notes in class into braille for later use. If the student does not want to learn braille, there are also very powerful but unfortunately, correspondingly expensive (i.e. $20,000) computer based reading machines that can transcribe print directly into a voice output. This allows the blind person to read any material he or she chooses without have it taped or brailled beforehand.

Once again, the same theme is emerging in yet another context. The the introduction of a computer has the potential for enormously increasing the range of autonomous action for the handicapped individual. With an automatic reader, even the totally blind person can keep up with the best sellers if he or she chooses.

Computers for students with no voice

The final category of programs for augmenting the senses is perhaps the most exciting of the new developments in the general area of computer based prothesis. This is the work on computer generated speech which, for the first timeis giving a voice interaction capability to nonspeaking individuals.

A significant number of students are born unable to use their vocal apparatus to communicate due to a variety of crippling diseases, the most common being cerebral palsy. Because it is so difficult to establish any sort of communication with these children, it is hard to know the extent of cognitive impairment, if any, that they may have. Also, because they can't communicate, normal social and emotional development is totally disrupted. Relative to other exceptionalities, this group of children numerically is not particularly large (e.g. according to a survey conducted in the Fall of 1985, there are about 2300 school aged students currently in the educational system in Ontario). Relative to other children however their impairment is extremely severe and their eucational and social prognosis are among the poorest of all exceptional children.

For the first time, sophisticated computer technology offers some hope of being able to give these children a voice and hence a chance at some semblence of normal life. Even the child who has the barest minimum of response capabilities, perhaps only the ability to blink an eye or to flex a forehead muscle, can be given a voice with a computer. If these minuscule responses are sufficiently reliable, they can be sensed by a computer and converted into signal that can in turn can be used by a computer based language system to construct any message the child wants to communicate. Once constructed, the message can be spoken or printed on the child's command.

Again the computer holds the promise of increased independence for the handicapped child. For the nonspeaking individual, however, the computer is far more than an educational aid. It may be the child's major lifeline to the outside world.

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